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THE BUILDER HOUSE, CATHERINE STREET, ALDWYCH, LONDON, WC2

Telephones: Temple Bar 6251-2-3-4

Vol. clxxxviii May 27, 1955 No. 5858

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NEWS SUMMARY

THE RIBA is invited to meet with the British Architectural Guild to discuss the latter's constitution and purpose. p. 865

THE ALUMINIUM CENTENARY EXHIBITION opens at the Royal Festival Hall on June 1. A special article on aluminium in the building industry and a paper on aluminium in building and structural engineering to be presented at the exhibition are given. p. 867

THE INSTITUTE OF BUILDERS proposes to set up forthwith a Board of Building Education. p. 869

ESTIMATING DAYLIGHTING IN NEW BUILDINGS with the aid of an adjustable permissible height indicator is the subject of a special article. p. 870

AMENDMENTS to the By-laws governing the constitution of the RIBA Council have been approved. In future, direct representation of Fellows and Associates will be equal. p. 878

PRELIMINARY PLANS TO DEVELOP THE SOUTH BANK announced by the LCC include the provision of an underground garage for 250 cars necessitating the demolition of the Shot Tower. p. 884

STATUS OF THE BUILDER

THE news that the Institute of Builders proposes to set up forthwith a Board of Building Education is welcomed with undisguised pleasure as an indication that the education and training of the young builder in the executive, administrative and managerial grades is at last to be taken seriously by those who have assumed responsibility for the building industry's most precious material—the young entrant.

Wherever those connected with building meet and talk, the problems crop up of making to work more smoothly what is admittedly the most difficult industry of all, difficult in the sense that it is required to give a precise product under imprecise conditions. Residually, all such talk comes down to the relationship of those who design buildings and those who turn those designs into structural reality—the architect and the master builder—and to the qualities of mind, integrity and ability of the men who engage in these two great callings.

It has long been recognised that the status and efficiency of the building trade can never be better than the quality of the men who practise its various parts. Architects and quantity surveyors have long had bodies responsible for educational policy which conduct examinations to published syllabuses, and grant degrees which have an established market value. The Institute of Builders, 120 years old, has had an equal responsibility and opportunity in its own field, but in recent times has succeeded only in so shrouding its work in mystery that no young builder-student has known what standard of educational background is expected of him, preparatory to sitting the Institute examinations and achieving a qualification which it is doubtful if many in the building industry and fewer still of the general public could accurately identify. Nothing has been won by hiding its light under a bushel, and a good public relations service for the Institute now seems essential if lost ground is to be quickly recovered.

Not the least satisfactory part of the proposal to set up a Board of Building Education is the evidence it affords that wise counsels now prevail within the Institute, and that by accepting the full support and assistance of the National Federation (which will have a strong minority representation on the Board) the ranks have at last been closed. Further details of aims and methods will be awaited with great interest, but the present announcement may be regarded as the first move towards the official encouragement of young men with that background of education which has so far led them into the recognised professions, to adopt building as a career. There are places ready and waiting for such men as well as for those others who reach managerial level through the craft side of the industry.

The industry needs to go farther yet. Until the qualifications of LIOB and FIOB become better known to the trade and public as the hallmark of a trained builder, and as such command a marketable value, the industry must do more than select and guide the building education of its young entrants: it must also give them a reasonable guarantee that when qualified a worthwhile job awaits them. The London Master Builders' Association has just approved the organisation on a broad basis of a pupilship scheme—a thing which some established firms have long operated. The extension nationally of such pupilship schemes is a matter which the new Board will, no doubt, encourage; training along recognisable lines with a known qualification at the end of the period, coupled to the certainty that a post is available which can lead to an executive position in a firm of standing, is the answer to the parent who asks: "How can my son become a builder?" That hitherto there has been no direct answer to give may in no small measure be responsible for some of the industry's present difficulties; there is now hope of better things. The whole industry will await further details with intense interest and meanwhile will wish to congratulate the Institute and National Federation, and their respective Presidents, Mr. F. Leslie Wallis and Mr. Harvey G. Frost, on the notable step that has now been taken.

Notes of the Week

RIBA EN FETE

IT is a perpetual tribute to its architect that the RIBA building seems able to accommodate any number of people without the least cracking at the seams. Thus the large company of members and guests who attended the annual reception on Friday last, aided by a well-devised programme of entertainment, circulated in perfect freedom and comfort in what still is London's most beautiful modern interior. The President and Mrs. Aslin received their guests (whose degree of distinction became clearer from the Court column of next day's *Times*) in the Florence Hall, where many danced, while others listened to recitals of music for two pianofortes by Mr. Miles Coverdale and Mr. Alexander Kelly, in the Henry Jarvis Room. The remarkable resources of the RIBA Library again became evident in the exhibition of books and prints of "Oriental Scenery" on the third floor. When we left, regrettably early, a quiet game of "Find the Lord Mayor" was in progress; who won we do not know but if the First Citizen did not succeed in finding Portland Place he missed a notable party. The programme cover, the Piazzetta at Venice, by the late Cyril Farey, is reproduced.

COMING EVENTS

SUNDAY, MAY 29

BBC THIRD PROGRAMME.—"Landscape in the Town," by Mr. Peter Shepheard, ARIBA, AMTPI. 6.15 p.m. To be repeated on June 2 at 11.5 p.m.

THURSDAY, JUNE 2.

ARCHITECTURAL ASSOCIATION.—First of a series of criticisms of members' works. 36, Bedford-sq., WC1. 6.15 p.m.

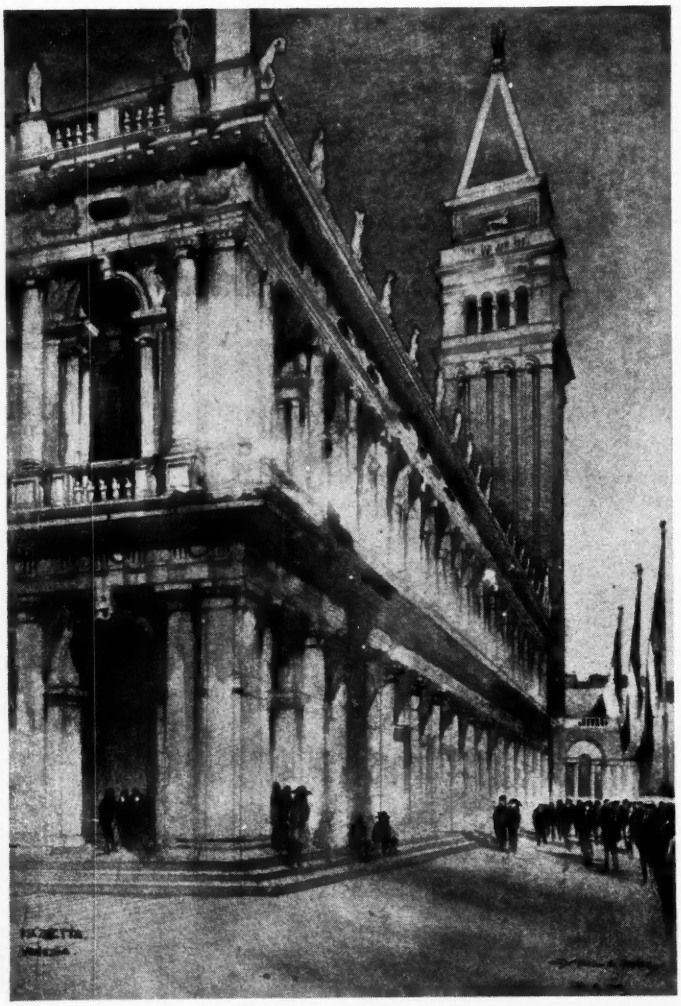
FRIDAY, JUNE 3

ROYAL INSTITUTION.—"Party to Peking," by Sir Hugh Casson, MA, FRIBA, RDI. 21, Albemarle-st., W1. 9 p.m.

REGISTERED PLUMBERS' ASSOCIATION.—Annual meeting of general council. Council Chamber, Whitley Bay. 10 a.m.

SATURDAY, JUNE 4

COUNCIL FOR THE PRESERVATION OF RURAL ENGLAND (SHEFFIELD AND PEAK DISTRICT BRANCH).—"Housing in a Hill City," by Mr. J. L. Womersley, ARIBA, AMTPI. Longshaw House, near Sheffield. 4.15 p.m.



THE PIAZZETTA, VENICE. This watercolour drawing by the late Cyril A. Farey, was reproduced on the programme for the RIBA's reception last Friday evening (see note). The drawing was included in Farey's Studentship Report for the Soane Medallion in 1920. *The RIBA recently stated that they are to arrange an exhibition of Farey's drawings at a date to be announced later*

"LETTERING: ART AND IDEAS"

AN ADDITION to the RCA's annual series of Inaugural Lectures was given under this title at the RSA on May 17 by Arnold Banks, a visiting lecturer attached to the College as Senior Fullbright Research Fellow, writes Basil Marriott. In his introduction, the Principal said that the distinguished American calligrapher and palæographer lectured "like a clown," apparently meaning that he normally drew letters while he talked without taking his eye off the audience, and took responsibility for possibly cramping the lecturer's style by stipulating no drawings on this occasion. A pity, since this would have helped both an interested audience and a speaker clearly happier with a brush or reed in his hand.

Banks was by no means inarticulate, however, and he quickly penetrated the perceptible chill, particularly as one successively found that our own tutelary gods in this subtle and splendid cult are apparently those also of the New World. To one whose passion was illuminated manuscripts from schoolboy age, and whose bible was Edward Johnston's "Writing and Illuminating and Lettering," it was disarming to hear that he, Eric Gill and Percy Smith have had such influence, and such patrons as Frank Pick such credit, in a country whose culture is made over-familiar to us by Hollywood and the trade-marks on bottled soft-drinks.

Banks gave us an incidental glimpse of the comparative systems of art training here and in the States, where he described it as being on the upswing, an incentive being the accessibility of university degrees to art students—a point worth remembering by those who feel doubts about some aspirations of the "reformed" RCA. He did not, however, throw light (as I had hoped) on the curious current revivalism in typography (no basically new types seem to have been designed since Gill's sans serifs and Johnston's "Underground"): the growing pre-occupation with Italic handwriting, which one cannot help feeling may become an anachronistic affectation, welcome as is the discipline for hand and eye.

He did, however, stress that the general excellence of lettering and typography—the latter probably the highest vindication of mass-production and standardisation—now tends to be taken too much for granted. Clearly a dedicated enthusiast, well capable of communicating his passion to others.

"HOUSING 1945-55"

THANKS are due to the Building Centre for letting us see (until June 4) the British contribution to the International Union of Architects' Exhibition at The Hague in July, subsequently to tour Europe. This will complement and amplify the publication of results of an international questionnaire to facilitate study at the fourth IUA Congress. It is welcome

evidence at least that what was described in this paper recently as almost a one-way traffic-jam is beginning to circulate, but it is necessarily a trickle from the fitting of a two-million "gallon" of housing into a pint-pot of some 20 small screens.

The selectors have managed a representative and worthy cross-section which includes such landmarks as Hatfield, Harlow, Pimlico, Paddington and Roehampton as well as some smaller "proprietary" schemes. I was depressed by its presentation, however: apart from an unappetising sage-and-onion colour scheme (a personal and admittedly minor point) quarrelling with the repetition of the Union Jack on each screen, the adoption of a cursive Italianate script (*pace* Arnold Banks, v. sup.) seemed oddly reactionary and incongruous to most of the architecture shown, as well as surely being not very legible to foreigners.

AMERICAN DECORATORS

A GROUP of six organisations, headed by the Dollar Exports Council, acted as hosts at a luncheon in Fishmongers' Hall in the City of London to a group of about 400 members of the American Institute of Decorators, who have been paying a visit to Europe as part of their annual conference. The visitors, who have come from every part of the United States, were welcomed by Sir Ernest Goodale, Sir William Rootes and Mr. Henry G. Dowling, and, in spite of a company whose number made even the Fishmongers' magnificent premises look small, the visitors obviously enjoyed themselves. One from Milwaukee tells us that the American public is swinging away from Italian and Spanish, and that English contemporary is being asked for. We hope that our visitors will find in London sufficient examples to give them the necessary lead in providing their clients with what they want.

ALL THE FUN OF THE FAIR

WHATEVER the merits or demerits of a commercial organisation being encouraged to take over part of one of London's parks in a highly congested area for the purposes of providing "entertainment," all would agree that if the Festival Pleasure Gardens in Battersea Park are to continue they should be good of their kind. Sir Leslie Joseph, managing director of the Festival Gardens company, is determined to see that they are, and for the present season, which was officially inaugurated last Saturday, a number of new attractions have been added to the fair. These include a 65 ft. high water chute; a new tree walk; "the jet plane"; "the world cruise"; "the crazy cottage" (nothing to do with not employing an architect); an electric speedway and improved catering amenities.

There seems no doubt of the commercial success of the Gardens under Sir Leslie Joseph's management, judging by attendance figures in last year's depressing summer (1,329,527). This year the figure is expected to go up. The aim is "to develop the Gardens more and more as a family venue, making sure that there are attractions to please all members of the family."

CORRESPONDENCE

RIBA AND BAG

To the Editor of *The Builder*

SIR,—Some months ago the British Architectural Guild announced through the medium of the technical Press that it was proceeding to invite salaried architects within the profession to support the activities of the Guild. As a result the Guild has received the support of a number of salaried architects, among them members of all the existing professional organisations.

It has always been the hope of the Guild that some means would be found whereby its existence would be acceptable to all branches of the profession; to that end the Guild itself has repeatedly made it clear that it would be only too willing to discuss modifications of its constitution in order to meet any possible objections that may be entertained on this score.

Let it be realised here and now that the British Architectural Guild is a separate entity and is not, as has been misrepresented, an appendage of the Incorporated Association of Architects and Surveyors. The IAAS was but an instrument in the formation of the Guild which was presented to the profession to be managed and controlled by those in the profession in whose interests it was formed. The IAAS has made it clear that it seeks no glory or reward, either direct or indirect, other than the realisation of an honest belief that what it did was done in the interests of the profession.

The Royal Institute of British Architects in annual general meeting has resolved that the Council of the Royal Institute should give further consideration to protective measures for salaried architects, in keeping with the wishes expressed through the questionnaire of last year. The Guild is once again suggesting to the Royal Institute that at least the question of its existence and its constitution be discussed. It should be pointed out that of all the criticisms levelled against the Guild none has been made of its aims and objects or of the soundness of its basic formation. The one criticism of its rules has been concentrated on the question of the representational constitution of its Council of Management, to which the Guild has already replied that this can easily be adjusted by a simple change of rules. One outcome of a settlement of personal differences between the professional organisations could be a representative body, not adrift but working in the closest possible liaison with all these bodies and thereby enhancing the dignity of the profession, while providing adequate machinery for the protection of all classes of salaried architects.

No criticism is implied of the attitude of the Royal Institute of British Architects; the Guild fully realises the difficulties with which the Royal Institute is confronted by virtue of its Royal Charter, and by reason of the large number of members who are also in private practice, and who understandably may not all welcome the formation of an employees' organisation. Unfortunately the trend of recent years has drawn a much greater proportion of architects into salaried employment, and particularly outside the field of private practice. If, therefore, the position of the architect is to be maintained, it is essential that these practitioners be adequately represented by architects; otherwise the salaried architect in nationalised industries, local government, central government and industry generally will be relegated to very inferior status in relation to that of other professions, and this in turn will adversely react upon the standing of the architect in private practice.

What standing will the private practitioner have in the world of commerce and industry when, say, the maintenance engineer employed by an industrial group fully develops the mental attitude where he has on his staff a number of "tame architects" whose salary and status are equivalent to those of ordinary workshop draughtsmen?

It is intended to present shortly a report of the recent activities of the Guild; in the meantime it is sincerely hoped that a solution will have been found to enable the various bodies within the profession to move forward as an allied phalanx instead of standing still in isolated self-sufficiency.

The Guild is prompted to ask the question "What have the professional organisations to lose by discussing the problem with the Guild?" To enter into a discussion at this stage could not be interpreted as recognition, if this is what is feared, but it would at least present to the profession a sign that the professional organisations are prepared to investigate all possibilities of furthering the interests of not only their individual members but also of the profession as a whole.

BRITISH ARCHITECTURAL GUILD.
59, New Cavendish-street, W1.

"THE ARCHITECTURE OF RECONCILIATION"

To the Editor of *The Builder.*

SIR,—Herewith a few artless rhymes inspired by Mr. Hope Bagenal's excellent article in your last issue:—

The critic frowned at the design
And gravely shook his head.
"To praise such work I must decline,
It's pitiful!" he said.
"Those walls of brick! That roof of tile!
That fenestration formal!
A cornice too! It makes me smile
The thing is so sub-normal!
"Such architecture is a farce,
It's as our fathers built!
Where are the curtain walls of glass?
Where the *pilotis* stilt?
"The architects of other climes
Would laugh such work to scorn;
You're hopelessly behind the times,
Your theory outworn!"
The architect his head let fall,
As smit with sudden pain;
And then he read Hope Bagenal,
And hope sprang up again.

SPERO.

THE COST OF BUILDING

To the Editor of *The Builder*

SIR,—Your correspondent, "Southron," in your issue of May 6 inquires why the present cost of building is not *pro rata* to the rise in cost of wages and materials. Surely the reason is not far to seek.

The graph of wages compiled by Mr. Venning shows the "official" rates of wages. Due to the scarcity of operatives, it is found that very few men are prepared to work for these basic rates,

" Your turn, dear colleague, to assist in mixing the mortar."

and demands of an extra rate of 2d. to 6d. or more per hour are common.

The graph furthermore only deals with the *cost* of materials. However, the contractor has to take into account the delay in delivery. If materials are not readily available, the organisation of the work is upset. When, as at present, materials are quoted as being subject to six months, 12 months or even longer delivery date, such delays cost money which the prudent estimator must take into consideration, and make due allowance for in his tender.

Other considerations are:

The multiplicity of variations during the course of the work. Apart from the disorganisation and delay to which variations give rise, the staff charges for dealing with these variations are considerable. The quantity surveyor gets paid for measuring these variations; the contractor gets nothing, apart from the trouble and disorganisation, to meet the salary of his surveyor, who is generally a more highly paid man than his professional counterpart.

Underpayment on interim certificates, and unreasonable time lag in settling the final account are also costly matters for the contractor to bear. Under the RIBA Form of Contract, usually not more than 10 per cent. should be retained during the course of the work, and 5 per cent. after practical completion. Yet every day I encounter cases where the retention considerably exceeds these figures, and it is not unusual to find, on settling the final account, that the sum due to the builder is considerably in excess of the authorised retention. In these days of high bank rates, excessive retentions and delay in settlement of final accounts are expensive matters for the builder to face, and make it difficult for him to finance his business.

The labour graph prepared by Mr. Venning is also based on the fallacy that the output of the operative is constant. Every builder knows that such is not the case. During the war, the pernicious system of " tea breaks " crept in, and has remained. Observation made on my own contracts reveals that—after allowing for at least five minutes each morning before the men actually " get to work "; the same allowance after the meal break; two tea breaks; and time spent in cleaning up and putting away tools at night—only 7¼ hours' actual work is done in an 8-hour day, or an addition of approximately 9 per cent. on the wages bill.

" ESTIMATOR."

*** Our correspondent makes one misstatement in the final paragraph of his interesting letter. The line on the graph marked "Building Costs" is based on actual tenders for the normal run of building contracts. The line of wages is based on actual standard rates and emoluments under the Working Rule Agreements. It is incorrect to say that this is based on any fallacy. The lines give the facts, leaving conclusions to be drawn from them. The tables published with the chart show the percentage increases in standard rates and emoluments. Our correspondent's letter gives, very fairly, some of the reasons for increased cost, but it must be kept clearly in mind that the graph does not assign reasons. The important line obviously is the line of building costs.—Ed.

WATER CHARGES

To the Editor of *The Builder*.

SIR,—I am sure that you and the building industry welcomed Mr. W. L. Trimm's letter (your last issue) as a useful contribution to your endeavours to improve the methods of assessing the cost of water supplies for building construction.

The Cuckfield practical check on the cost of water used for the construction of a single house bears out completely the experience of my firm in the construction of a large factory where all the concrete structural members were precast on site. If a few builders with evidence of the fair measure given by metered records care to submit data to you, I am sure the validity of your test would be accepted without further quibble.

No one would challenge that part of Mr. Trimm's first conception that water is a Public Health necessity. But his subsequent deductions are not so unimpeachable. When assessing ability to pay, does Mr. Trimm really believe that the construction cost inflated by unrealistic water charges is not eventually reflected in prices, rents and rates? The question of who subsidises what and how can be very complicated and it would be interesting to learn just how far the water undertakings are empowered to act as arbiters in this field. Certainly costs must be kept to a minimum but surely not distorted by permitting the water undertakings to extract a subsidy from the construction industry.

Does the use of water for construction purposes increase or reduce the cost of production per gallon? If the water undertakings cannot assume that they will get an economic return from each new consumer, what is the alternative? Not all consumers are in the domestic field and I have yet to learn that the industrial user is discouraged by grossly inflated assessments.

The digression about the cost of a meter pit need not be taken seriously, for I am sure you are not setting out to establish a case for metered supplies to single house sites. Give the builder the option of a metered supply or an assessed value, and if he opts to have a metered supply he will do so knowing that the metered value of water consumed *plus* the incidental pit construction cost is adding less to the total production cost than the assessed value.

Mr. Trimm's letter leaves in my mind a rather confused vision of water undertakings seeking to prove sound economy to the ratepayer and bolstering the economy by doubtful methods. I hope you will continue your efforts to clarify the position and relieve building construction costs of an item which rightly accrues elsewhere.

NORMAN LONGLEY [CBE]
James Longley and Co., Ltd.

Crawley, Sussex.

*** Dissatisfaction with reductions of the rates of charges for unmetered water on London building sites, expressed by the Metropolitan Boroughs SJC, is noted on p. 886. The SJC is pressing for metered supplies.— ED.

NOTIFYING TENDERERS

To the Editor of *The Builder*.

SIR,—Referring to your article " Notes of the Week " in the last issue of *The Builder*, it may be of interest to you to note that all tenderers for building works carried out by this authority will be informed, within seven days of the date of tender, of the result of their respective tenders and the amounts of all other tenders submitted.

I have no doubt that this will assist contractors to control their commitments more effectively and will allow them to tender for a greater number of works with this authority.

H. J. MULDER [AMICE, ARICS]
Borough Engineer and Surveyor,
The Town Hall, Ilford.

SCHOOL BUILDING IN ESSEX

A Fine Post-war Record

BY EASTER this year Essex County Council had opened 127 complete new post-war schools, about 50 more were under construction, and about 30 others on the drawing board; in other words, some 58,000 new school places have been provided in Essex since 1947 at a cost of more than £15m. Complete new schools are now being opened in the County at the rate of one school a week. This is a remarkable achievement, on which the County authorities, and particularly their architect, Mr. H. Conolly, FRIBA, and his staff, are to be cordially congratulated.

A special Building Supplement to the May number of " Essex Education," just issued from County Hall, Chelmsford, gives a most interesting account of this work and includes 62 photographic illustrations of schools, several of which have been designed by private practitioners in association with the County Architect. All the schools are in the contemporary idiom, and an excellent standard of architecture is maintained. Our only criticism of this interesting publication is that it gives no plans.

ALUMINIUM IN THE BUILDING INDUSTRY

By a Special Correspondent

IT is only one hundred years since the first commercial process for aluminium production was discovered, and little more than sixty since the present-day electrolytic process was evolved, but during this comparatively short period aluminium has grown from an expensive curiosity to an industrial metal second only to iron and steel in volume of world production.

From the earliest days of its commercial production there are records of the use of aluminium for roofing, notably the oft-quoted Church of San Gioacchino (1897) and the Secretariat buildings at Sydney (1900). Both these roofs have been carefully examined in recent years and, although the original sheets were not of the composition which would nowadays be used, corrosion has been almost negligible and both roofs obviously have a considerable further life. These examples, however, are from abroad, and in this country the metal's early uses were mainly for hardware such as pots and pans and other kitchen utensils, for the parts of cars (mostly in the form of castings) and for other uses where the saving in weight was of greater importance than other characteristics such as corrosion resistance.

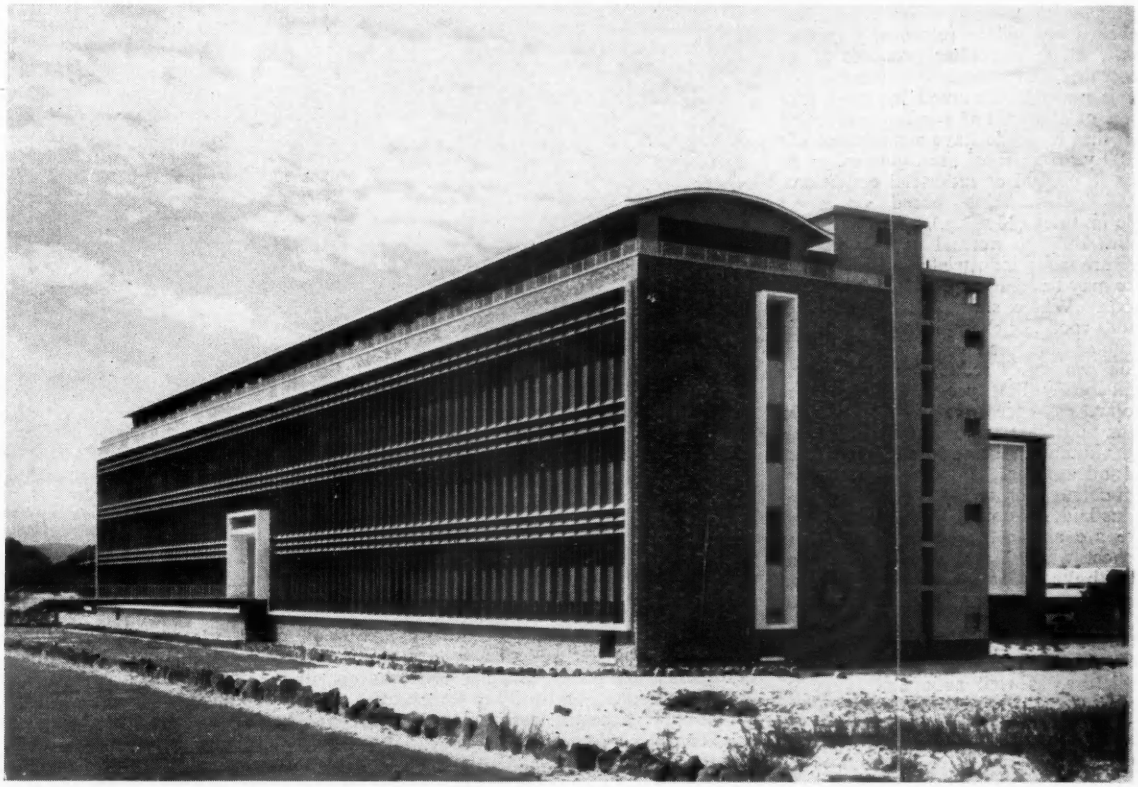
Production capacity increased very rapidly during the 1914-18 war and, owing to the demands of the aircraft industry, the strong aluminium alloys came into production. In the inter-war years there was a considerable increase in the amount of aluminium used by the building industry, but it was almost entirely non-structural, and had no noticeable influence on the architectural characteristics of the buildings concerned. The metal was, in fact, regarded mainly as decorative, partly owing to its pleasant silvery colour, and also because, when anodised, it could be dyed in a large range of permanent colours. It was therefore used mainly for grilles, balcony railings, lighting fittings, lift doors and also to a considerable extent for door furniture. Structural uses, in this country at any rate, were almost negligible, but a start was made with extrusions for windows and patent glazing bars, while in New York cast aluminium spandrel infillings were used in the Empire State Building.

Aluminium for structural work was first used, as one might expect, for purely engineering purposes, the classic example being the Smithfield-street bridge over the Monongahela river at Pittsburgh, where the steel decking and beams of the suspended roadway were replaced by aluminium alloys in 1933, saving some 700 tons of dead weight and giving an overloaded structure a further useful life estimated at about 40 years.

1945 ONWARDS

From the outbreak of the late war aluminium was a vital strategic material, and none was available for building. Fabricating capacity, however, had been very considerably increased, and at the same time there were tens of thousands of operatives in the aircraft industry whose work would normally have finished in 1945. The provision of employment for these workers was, as much as anything, the reason for the Airoh house which, although it made a considerable contribution to the temporary housing programme (doubly important in that it made use of labour outside the already overloaded building industry), cannot truly be regarded as a suitable design for prefabrication. The same criticism can, of course, be levelled at the other temporary houses, for it now seems to be generally accepted that prefabrication should be a proper *system* of building to any plan, rather than the quantity production of a single building type.

Prefabrication in aluminium has now been further developed, and there is a considerable export of houses in which



SANLAM HEADQUARTERS, BELLVILLE, CAPE PROVINCE. Designed by Messrs Meiring & Naudé, AA.RIBA, MM.IA, of Cape Town, this building is one of the largest anodised aluminium structures in the Southern hemisphere. The metal has been used in a combination of tones, light bronze for the vertical fins to which are joined horizontal louvres in light gold. The banding panels are also anodised light gold, and the resulting pattern is striking. Basically aluminium alloy 51 sw was used for extruded sections. The metal has also been used to a considerable extent internally.

the plans can be varied and where the house is shipped "piece small," thereby saving freight costs and also often allowing local materials to be used for insulation or panel infilling. Similarly, the prefabricated school developed by the Bristol Aeroplane Company's housing division can be planned as required, and similar units have been used for hospital building abroad.

In the immediate post-war period there was, of course, an extreme shortage of both timber and steel, and as a result aluminium was too often used for purposes for which it was not really the most suitable material. For the last few years, however, the metal has mostly been used in a logical way—where its particular characteristics of lightness, strength and durability make it the logical choice for the purpose in hand.

DURABILITY

For the purposes of the building industry the extreme strengths combined with lightness which the aircraft manufacturer demands are probably of less importance than durability. The latter is of a high order, owing to the hard and strongly adherent oxide film which forms on the surface of the metal. Tests in various types of atmosphere from rural to coastal and industrial, show that the worst of any corrosion which is going to take place will occur soon after initial exposure, and that after a period of 18 months to 2 years the oxide film has thickened enough to retard any further attack, which thereafter proceeds at an almost negligible rate.

It is normally assumed by most producers of aluminium* roofing and siding sheet that it should have a minimum life of 100 years in rural atmospheres, or 50 years in coastal or industrial conditions, these figures being based on sheet 0.036 in. thick (20 s.w.g.). This naturally applies only to normal exposures, and there are many industrial processes where there may be highly aggressive local conditions. Where sheet is installed on a factory roof, for example, concentrations of fumes combined with heavy condensation can easily reduce the life of the metal below that predicted by figures obtained from freely exposed test panels.

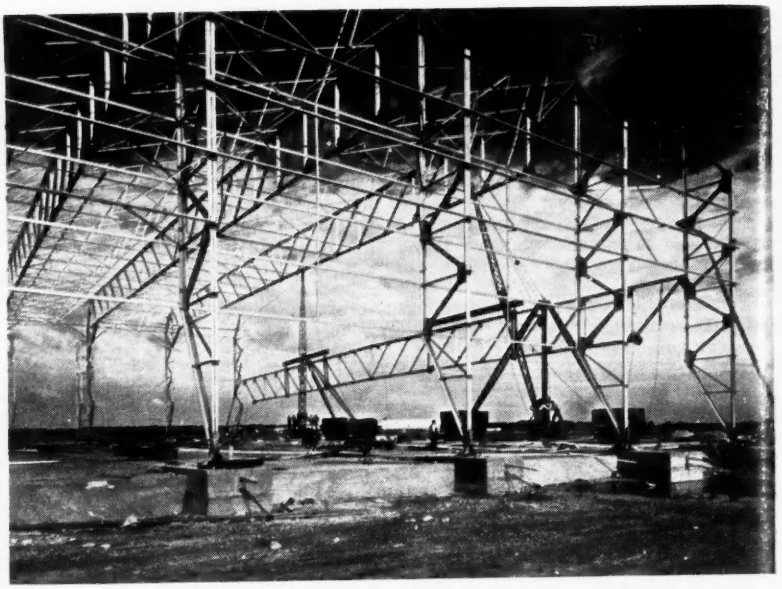
For both sheet roofing and wall cladding aluminium has several other practical advantages. In the normal 3-in. pitch corrugation the weight of the sheeting, as laid, is about ½ lb. per sq. ft., and there are also standard trough sections of sheet which have been designed for use with the wide purlin spacings so often used with wide-span industrial roofs. For use with all these standard sheeting types a number of fittings are produced, such as flashing strips, sheet-lights, ridges and ventilators, as well as a full range of hook bolts and other fixings, all in the same alloy as the sheet. Patent glazing bars are also produced in a variety of designs.

RESISTANCE TO CORROSION

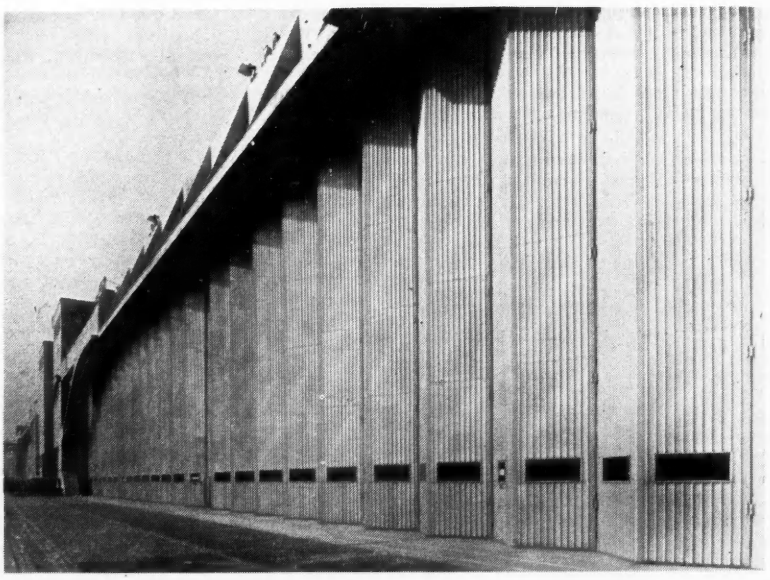
It would be absurd to put forward aluminium as the ideal roofing material, but there are many applications where its durability makes it the best possible choice. In tanneries, for example, where ferrous metals need painting three coats every six months, in foundries and in many other applications such as gasworks and locomotive sheds, it is frequently found that asbestos cement and galvanised steel sheeting have a life measured only in months, whereas aluminium has lasted several years. It should not be assumed, however, that aluminium will withstand every type of chemical attack, and before making a final choice it is advisable to consult the manufacturers and obtain a definite opinion on the probable life of the material.

Sheet roofing is not, of course, the only form in which aluminium may be used. In America it is supplied as an external sheathing for timber houses, although it is all too often formed to give an imitation of weather-boarding. In this country interlocking tiles are produced for nailing to battens in the usual way, and there is also a form of dovetail section strip which is applied in long lengths to fixing strip on battens. Fully supported roofing is also used to a considerable extent, the technique of application being much the same as with other traditional metals, both the standing seam and the batten and conical roll systems

*Alloy NS.3 (BS.1470)



HANGAR in aluminium, 200 ft. clear span, for De Havilland Aircraft Co. (S.M.D. Engineers, Ltd.) Architects: James M. Monro & Sons.



FOLDING AND SLIDING DOORS as mounted on a hangar at London Airport. (Head Wrightson Aluminium, Ltd.) Door opening 46 ft. high and 300 ft. long.

being applicable. For fully supported roofs the same alloy (NS.3) is suitable, but the ordinary commercial purity sheet (99 to 99.8 per cent. purity) is softer and easier to work. Super purity (99.99 per cent.) is even softer, having only a very little more spring-back than lead, and is thus very easily formed into rolls, flashings or weatherings.

In all aluminium roof installations certain elementary precautions are necessary. Components in copper, brass or bronze should not be used in contact with any of the aluminium alloys, and contact with iron or steel should also be avoided, though corrosion is less likely. Galvanised steel, stainless steel and lead are harmless, except possibly in coastal areas. Water draining on to aluminium from copper-containing materials will cause corrosion, but drainage in the opposite direction (assuming no actual contact) will be harmless. Contact with cement and lime mortars should also be avoided, and it is good practice to insulate the metal with a zinc chromate or bituminous paint if the material is likely to be permanently damp.

As well as the sheet roofings and wall claddings, cast or pressed panels have been used in America for the facing of large skyscraper blocks. The first building of this kind was for the Aluminium Company of America, and used pressed panels of storey height. Perhaps the most important sequel to this job was that the contractors, whose own headquarters building was in the final design stage, had the complete scheme modified to make use of two-storey aluminium panels. Since the Alcoa building a further 70 large blocks using the same method of cladding have been designed.

In this country nearly all the manufacturers of metal windows have produced systems of wall cladding, most of which make use of hollow extruded aluminium alloy mullions and transoms, the mullions being fixed to the structural floor slabs and forming a lightweight grid which will accept windows or panel infillings (in aluminium or other materials) wherever they may be required.

STRUCTURAL USES

For structural purposes aluminium alloys have the great advantage of saving about one-third of the weight of a steel structure, and although the first cost will in most instances be greater there are numerous secondary factors which will show a balance in favour of aluminium. Additions to existing buildings, for example, may only be possible if weight is kept to a minimum, and there are also many types of portable buildings such as aircraft hangars and exhibition pavilions where the saving in weight allows dismantling and re-erection to be carried out with a minimum of plant.

There are also possibilities in the design of long-span travelling cranes for factory use, as the weight of a steel crane structure is large in relation to the load lifted. On a span of 100 ft., for example, the crane itself will weigh over 40 tons if designed to lift a 10-ton load, and this can be reduced to less than 20 tons if aluminium alloys are used. This saving means that the load on the crane rail beams will be reduced, and also the load to be carried by stanchions and foundations, so that the building structure will cost less.

In the jibs of larger mobile cranes, drag-line excavators and guy derricks, the savings in weight are of considerable importance from the contractor's point of view, for the rack and lifting capacity can be increased with the same total overturning movement. As an approximate rule the advantages increase with the length of the jib, and become of particular importance with jib sizes of 100 ft. or more.

In a good deal of builders' plant weight is not of great importance, but ladders, tubular scaffolding and barrows of light alloy are easy to handle and have a long life. Road transport vehicles also can show considerable economies as quite large tipper bodies can be built which still have an unladen weight of less than three tons and thus come into the 30 m.p.h. speed limit class.

Paints with a base of aluminium paste are now widely used, particularly for undercoatings, as they have excellent covering capacity and the leafing qualities of the thin flakes of aluminium provide a thoroughly waterproof coating.

Aluminium foil is a most efficient insulator owing to its heat reflecting properties, and many manufacturers produce plasterboard with a layer of foil on one face for the insulation of ceilings. Corrugated foil is also supplied in rolls for fixing between ceiling joists or in the framework of timber buildings.

*** The Aluminium Centenary Exhibition opens at the Royal Festival Hall on June 1. A paper to be presented at the exhibition on aluminium in building and structural engineering appears on p. 882.

BOARD OF BUILDING EDUCATION

Training for Management

THE Institute of Builders proposes to set up forthwith a Board of Building Education. The National Federation of Building Trades Employers welcomes this move and agrees that it is desirable that there should be close collaboration between the two organisations in regard to the education and practical training of the executive, administrative and managerial grades in the building industry. Such collaboration would be directed towards securing the general recognition of proper standards of training and qualifications for such personnel and towards supporting and strengthening the activities of the Institute, which has the major responsibility in this field.

To this end the Institute, with the support and collaboration of the Federation, is resolved to establish a Board of Building Education to advise on methods and standards of technical education and practical training for executive, administrative and managerial positions in building. Initially the Board will comprise not more than ten Institute members appointed by the Council, who will invite the Federation to appoint not more than eight representatives. At an early date the Board might invite representatives of professional, educational and operative interests to join the Board, provided that the total number of such representatives shall at no time exceed one-third of the total number of the representatives of the Institute and the Federation.

The Board will elect its own Chairman, who need not necessarily be a member of the Board. The Board will annually submit a report to its component bodies through the Institute Council, who will authorise publication. The Board may also issue from time to time interim reports and recommendations on specific matters. The Institute will appoint a secretary and other staff to the Board.

*** See Editorial comment, p. 863; National President's comment, p. 885.

ARCHITECTURAL ASSOCIATION

Election of Officers and Council

THE RESULT of the ballot for the election of the officers and council of the Architectural Association for the session June 1, 1955, to May 31, 1956, is as follows:—

President: Bryan Westwood.
Vice-Presidents: Gontran Goulden and John Brandon-Jones.
Hon. Secretary: D. Clarke Hall.
Hon. Treasurer: Edward Playne.
Hon. Editor: J. M. Austin-Smith.
Hon. Librarian: Neville Conder.

ORDINARY MEMBERS OF COUNCIL: B. L. Adams, H. T. Cadbury-Brown, Oliver J. Cox, John S. Lacey, H. J. Whitfield Lewis, Howard V. Lobb, Peter Newnham, Miss Barbara Price, Graeme Shankland, Peter Shepheard (Past President), Prof. Basil Ward.

Course in Tropical Architecture

APPLICATIONS are invited from post-graduate students of architecture and qualified architects with interests in the field of building in the tropics, for the next six-month full-time Course in Tropical Architecture (session September 26, 1955-March 23, 1956) to be held at the Architectural Association, 36, Bedford-square, WC1.

The fee for the course is £80. Studentships for the amounts shown have been donated by the following firms: Messrs. Higgs and Hill Ltd., 1 studentship of £100; Messrs. John Laing and Son Ltd., 2 studentships each of £50; The Yorkshire Copper Works Ltd., 2 studentships each of £50; Messrs. Crittalls Ltd., 1 studentship of £50; Messrs. International Paints Ltd., 1 studentship of £40.

Applicants for studentships should apply by letter to the Principal before June 30.

COMPETITION NEWS

State Opera House for Sydney

THE Government of New South Wales have decided to build a State Opera House at Bennelong Point, a headland on the eastern side of Circular Quay, in Sydney Harbour. The design of the building is to be the subject of an open architectural competition. The project is at a very early stage, and the names of the assessors, premiums to be awarded and other details have not yet been decided upon.

The building is to include two auditoria, one to seat 3,500 people at performances of opera, ballet and orchestral and choral works, and a smaller hall to accommodate 1,200 people for other performances.

ESTIMATING DAYLIGHTING IN NEW BUILDINGS

The Advantages of an Adjustable Permissible Height Indicator

By W. F. MANTHORPE, ARICS, AMTPI

THE idea of a series of permissible height indicators, for town planning use in testing building schemes, was first introduced in a paper given by G. T. Pound at a general meeting of the Town Planning Institute on March 20, 1947, and has received official support in the Advisory Handbook on the Redevelopment of Central Areas, published by the Ministry of Town and Country Planning, as well as in the booklet, "The Density of Residential Areas," published by the Ministry of Housing and Local Government.

Since June, 1949, these indicators, with slight modifications, have been used by the London County Council as a standard in examining all residential and other development proposals. Known as the Daylighting Code, the indicators, as employed in London, are fully described together with their method of application in the "Analysis" accompanying the Administrative County of London Development Plan, 1951.

There have been criticisms of the code at various times, one of the earliest being contained in an article entitled "Planning for Daylight—Some Comments on the MOTCP Indicators" by John Swarbrick, which appeared in *The Builder* of August 20, 1948. An appreciation of the new system, by the late Percy J. Waldram, under the title of "Control of Urban Redevelopment: An Examination of Current Proposals," was published, also in August, 1948, in the *Journal* of the RIBA. He pursued the subject in *The Builder* of November 19, 1948, with a paper entitled "Urban Obstruction to Light and Air—an Alternative to Control by Code." There has subsequently been little public discussion of the Code, the exceptions to the general rule being those town planning appeal inquiries where a developer has disputed the refusal of permission for his proposals on the grounds of infringement of daylighting angles. But these have not been numerous and, so far as can be ascertained, in no instance has the subject been argued at sufficient length to enable it to be carried forward to a further stage of development.

RECENT RESEARCH

Development research in relation to the Code would be expected to fall under two main headings, namely:—

(i) Reconsideration of the daylighting requirements upon which the design of the indicators is based, and

(ii) Improvements in relation to the indicators themselves as a method of testing development proposals.

In relation to the first heading, recent studies by the Building Research Station suggest that it may now be possible to take into account some of the differences between sky factor and daylight factor which are due to unequal distribution of sky brightness and to reflected light. Some regard must also be paid to the size of windows in post-war office buildings. The Code was designed on the assumption that windows would have dimensions of 10 ft. sq., but a limited survey of twenty-four buildings selected at random suggests that the average ground-floor window is only about 7 ft. sq., while the average first-floor window is about 6 ft. 3 in. high by 6 ft. 6 in. wide.

These are fundamental problems, but any attempt to solve them would probably have to commence with a survey of the daylighting conditions and other related factors in a carefully designed sample of the building schemes which have been erected in accordance with the indicators in their present form. This would, in itself, be a lengthy operation. It is, moreover, extremely disconcerting for both applicants and their professional advisers when planning standards are changed. Consequently, it is doubtful whether planning authorities would accept an entire revision of the Code. The present paper is, therefore, devoted to questions arising under the second heading and deals solely with the technique of applying the daylighting standards inherent in the present indicators.

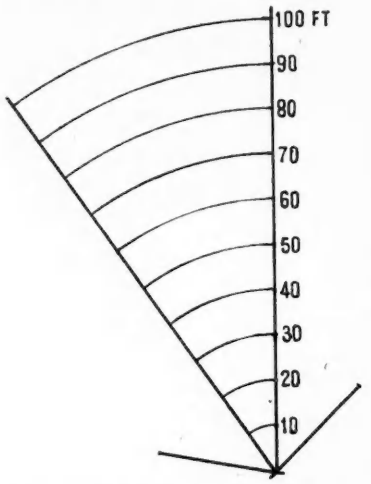


Fig. 1.—A permissible height indicator.

THE DAYLIGHTING CODE INDICATORS

The indicators are sixteen in number, divided into four groups of four. Fig. 1 illustrates a typical indicator which consists of four lines meeting at a point. The central angle is marked to show permissible heights by means of calibrations to 10 ft. vertical intervals. The indicator is, in effect, the projection on to a horizontal plane of the lower surface of the solid angle or "box" of light reaching a reference point. The indicators are drawn to the appropriate scale on a transparent material and placed over the plan of the building layout. They are then manipulated along plot boundaries, street centre lines and building façades and if none of the buildings which are found to lie within the central angle exceed in height the figure permitted by the calibrations, then the scheme is said to comply with the requirements of the Code. The indicators may be pivoted on the point of intersection of the four lines, but the short outer lines define minimum angles of acceptance, limiting the swing of the indicator and consequently the width of the arc within which light may be obtained.

The four groups of indicators are used respectively for testing the relationship of (a) non-residential buildings to plot boundaries and street centre lines; (b) residential buildings to plot boundaries and street centre lines; (c) non-residential buildings to others on the same plot; and (d) residential buildings to others on the same plot. Within each group, the first indicator is intended to deal with the conditions which arise when buildings are placed parallel to each other so that ground-floor windows enjoy the light from long shallow areas of sky at a relatively high angle of elevation. The last indicator in each group describes a nar-

(*Continued on page* 888.)

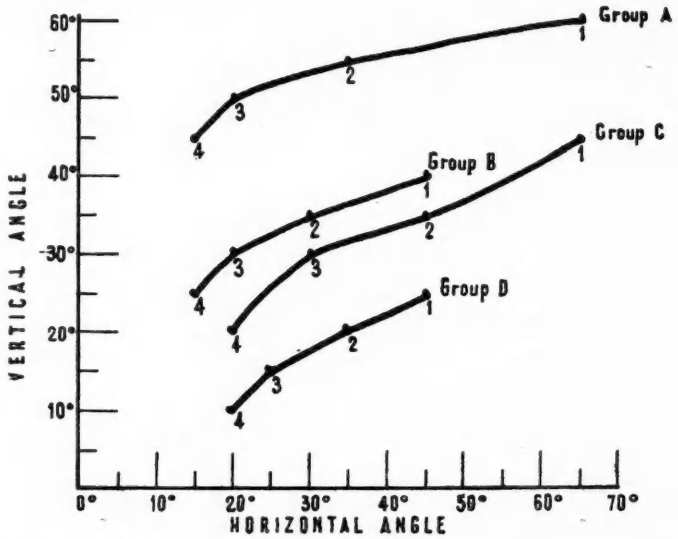
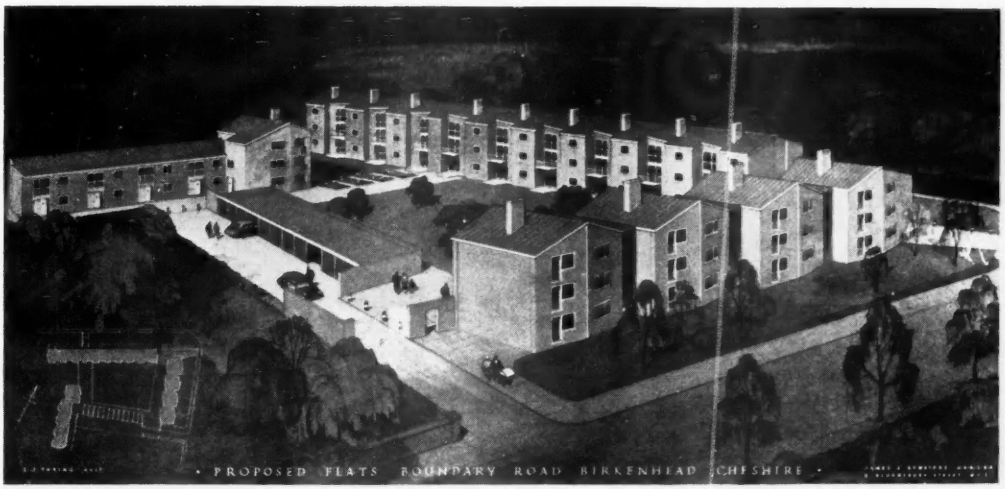


Fig. 2.—Permissible height indicators of the Daylighting Code. Curves linking points identified by the angular co-ordinates of the indicators.



Drawn by E. J. Thring.

***PROPOSED FLATS, BOUNDARY ROAD, BIRKENHEAD, CHESHIRE.** James and Bywaters, Architects.*

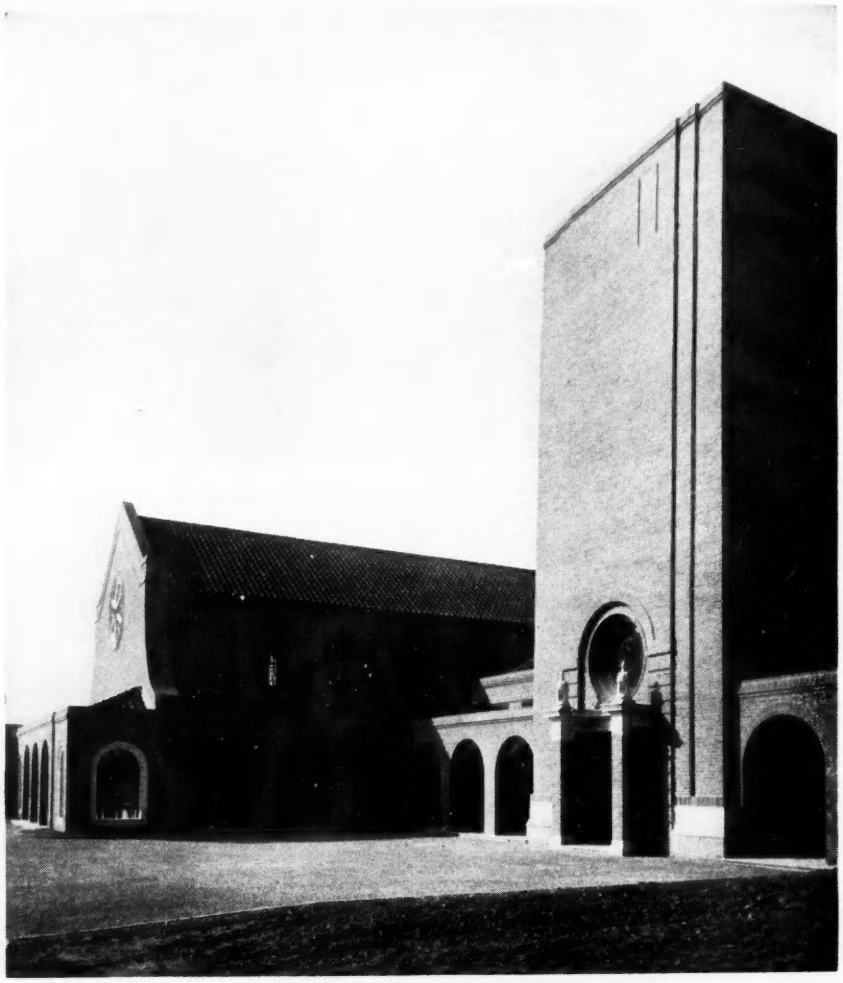
Architecture at the RA Summer Exhibition

Drawn by John Barton.

***FLATS AT WEST HILL, HIGHGATE.** Eric Lyons, FRIBA, Architect.*

Drawn by A. A. Bellam

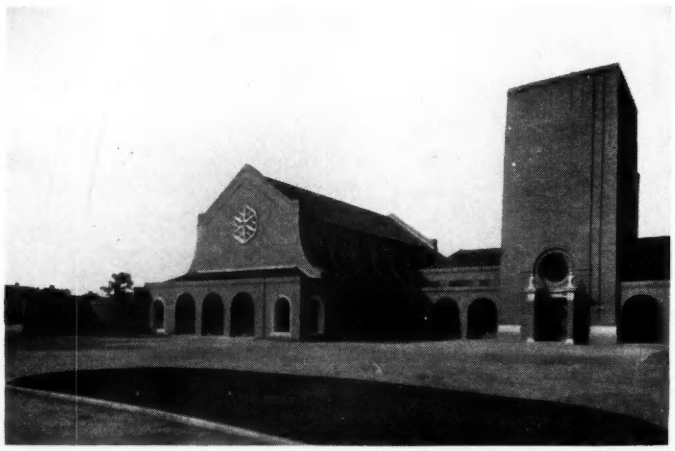
***HIGH FLATS IN TWIN TOWERS.** J. H. Forshaw, M. B. Blackshaw and A. A. Bellamy, Architects*



The South-West Middlesex Crematorium at Feltham

JOHN L. DENMAN & SON, ARCHITECTS

WILLIAM WILLETT, LTD., BUILDERS



Above: View from east.

Left: View from south.

THE crematorium, with its Garden of Remembrance, is situated at Hounslow-road, Hanworth, in the Urban District of Feltham, and is surrounded by open park land. The site was chosen for its beauty and peaceful nature, and is readily accessible from any of the areas which it is designed to serve. It is provided jointly by the boroughs of Heston and Isleworth, Southall and Twickenham, and the urban district councils of Feltham, Hayes and Harlington, Staines, Sunbury-on-Thames and Yiewsley and West Drayton. The clerk to the Board is Mr. W. H. Jones.

The building, when completed, will contain two large chapels each seating 80 persons, and a smaller chapel for 24 persons; at present one large chapel and the smaller chapel have been built.

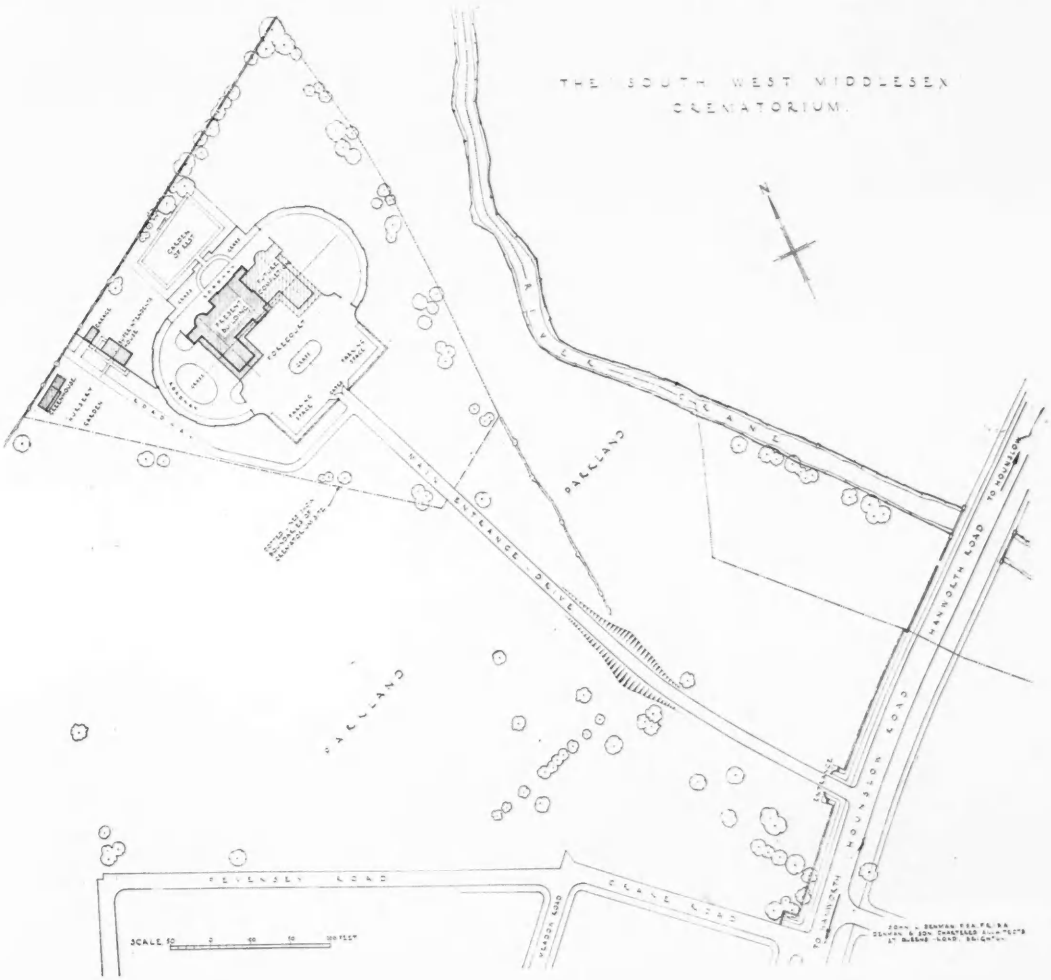
The chancels to the chapels are paved with Travertine marble, polished, and the floors to the naves and elsewhere are laid in Missanda wood blocks. Indirect lighting is arranged to give illumination of an appropriate intensity to the chancel and Portland stone altars. The coffin, after being placed on the catafalque, remains on view and undisturbed through the whole of the service, curtains suspended from an oaken rood beam moving silently, at the appropriate moment, across the front of the catafalque. Arcaded cloisters are provided for the convenient reception of mourners.

The main entrance leads directly into the Hall of Memory, where a book of Remembrance, in a carved oak cabinet, provides a permanent record of those cremated. This book, of sheep-skin vellum, was designed by Mr. F. G. Marshall. Wood carving has been executed by Messrs. J. Cribb and J. Skelton, while the leaded lights and stained glass have been carried out, from the cartoons of Mr. Charles Knight, RWS, ROI, by Messrs. Gray and White and Messrs. Barton Kinder and Alderson.

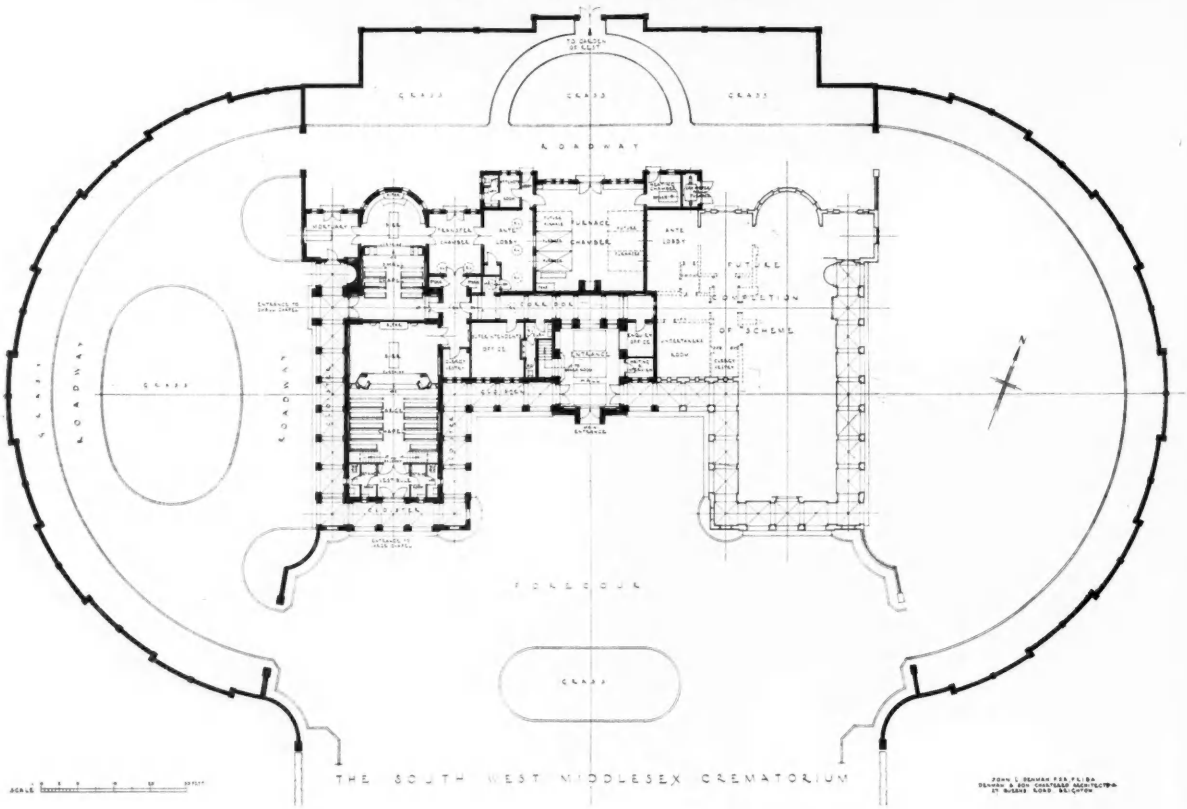
The Garden of Remembrance, with paths running through, is laid out around the crematorium, which is built in brick with stone dressings, roofed with Roman pantiles.

Sub-contractors and suppliers were:

Stonework, Samuel Bysouth and Sons, Ltd.; constructional steelwork, Matthew T. Shaw and Co., Ltd.; metal windows, The Crittall Manufacturing Co., Ltd.; wrought iron gates, George Allen and Grundy Arnatt, Ltd.; Travertine pavings, C. Walker and Co., Ltd.;

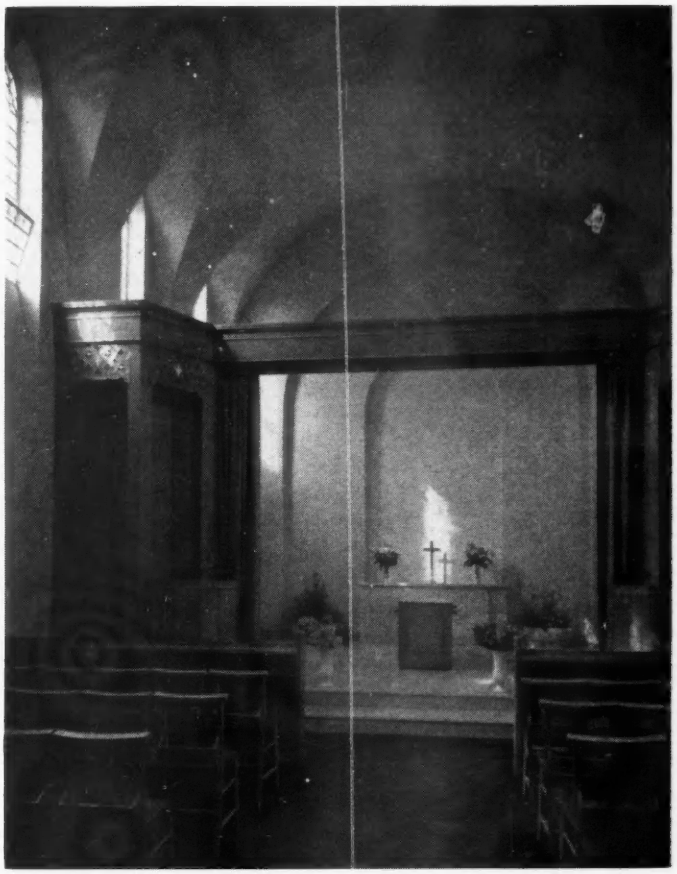


View of cloisters of west chapel from south.



wood block flooring, Hollis Bros., Ltd.; thermoplastic flooring, Semtex, Ltd.; fibrous plasterwork, Day and Parker, Ltd.; heating installation, W. H. Fellingham and Sons, Ltd.; electrical installations, Troughton and Young, Ltd.; furnaces, Gibbons Askam, Ltd.; roof tiling, Finnis Nicholls (Roofing), Ltd.; catafalques: metal frame, Highton and Son, Ltd., and oak enclosures, Saunders Watts, Ltd.; oak cabinet for Book of Remembrance and table, Frank Duke, Ltd.; chairs, seating, John P. White, and Sons, Ltd.; curtains, kneelers, etc., Jordan and Cook, Ltd.; garden works, J. Burley and Sons, Ltd.; greenhouses, Skinner, Board and Co., Ltd.

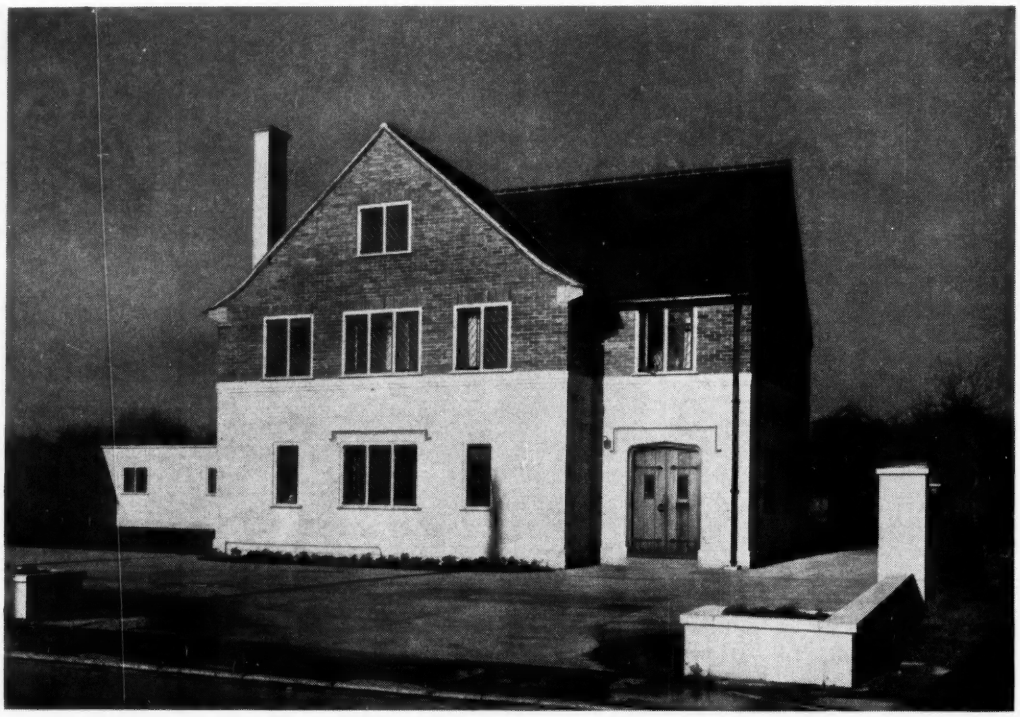
The consultants for piling and reinforced foundations were Messrs. T. F. Burns and Partners. The boundary walling, approach road and services were carried out by Tersons, Ltd.



View in west chapel, looking towards catafalque. The altar is in Portland stone and the floor in Missanda wood block, except in the chancel where Travertine has been used.

SOUTH-WEST MIDDLESEX CREMATORIUM, FELTHAM

Detail of carving in west chapel.



View of front elevation. Below : Plan.

"LAMB INN," WEARE, SOMERSET

Architect
REGINALD H. GALLANAUGH, LRIBA

Quantity Surveyors
HORACE LISSENDEN & PARTNERS

Builders
A. R. RAINEY & CO.

THE roof of this small inn, which was recently completed, is covered with hand-made clay tiles, the brickwork is of a light greyish brown, and the stonework reconstructed Doulting stone tool faced. The suppliers and sub-contractors were as follows:

Electrical work, L. A. Evans, Ltd., Weston-super-Mare; joinery work, H. F. Tottle and Sons, Ltd., Bridgwater; sanitary fittings and ironmongery, Gardiner Sons and Co., Ltd., Bristol; roof tiling, Hall and Co., Ltd., Bristol; reconstructed stonework, Wharf Lane Concrete Co., Ilminster; asphalt and tarmacadam, Asphalte Specialists, Ltd., Bristol; floor tiling, Marley Tile Co., Ltd., Bristol; windows, Ideal Casements (Reading), Ltd.

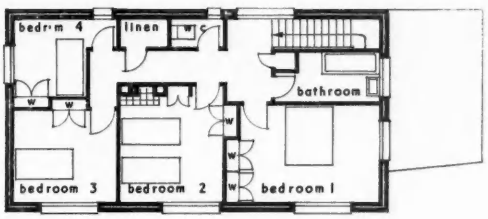
View from south-east.

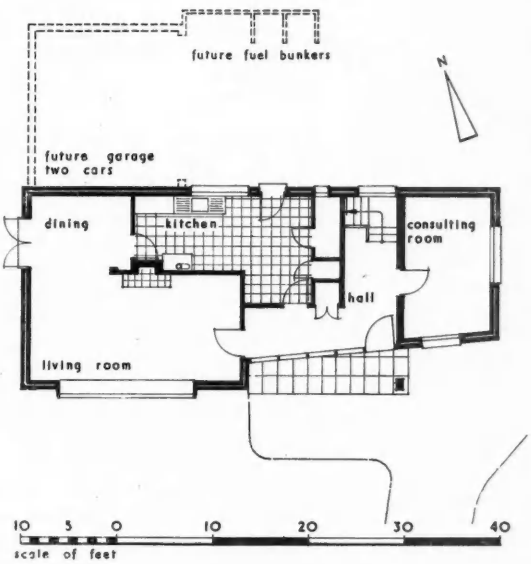
A DOCTOR'S HOUSE AT HARSTON, CAMBRIDGE

Architect: J. M. McLACHLAN, ARIBA

Quantity Surveyor: G. A. LEWIS, FRICS

Builder: H. A. WILSHER





THE client is a member of a group practice in a rural area south of Cambridge, and although a central surgery is provided away from the house, a small consulting room was included. The site, flat and open, is approximately one acre in extent, and occupies a corner between the main road to Cambridge and a local road. The house faces SSW. External walls are part hand-made facing bricks, purple-brown, and part common bricks treated with Snowcem. The roof covering is of Western red cedar shingles, on light-weight timber trusses. All windows are EJMA standard timber casement, excepting in the living-room and the glazed screen to the hall, which are purpose-made. A convector fire warms the living-room and dining area, and also heats two radiators. Cooking is by a solid fuel burning unit, which also provides hot water. A future garage is planned to the north of the house, with fuel bunkers, to form a kitchen yard. Drainage runs to a septic tank. The floor area is 1,540 sq. ft. and the contract sum, £4,530, including drive and temporary fencing.

north elevation

THE RIBA COUNCIL

Changes in the Constitution

THE Committee appointed in May, 1954, to examine the constitution of the RIBA Council, has now reported to the Council; the latter has approved a number of recommendations.

The examining committee of eleven, under the chairmanship of Mr. Kenneth M. B. Cross, FRIBA (hon. secretary), were given the following terms of reference:—

1.—To review the recent constitution of the RIBA Council in all its aspects and to report in particular on the following questions:

(a) Is it representative of the various classes of membership? If not, should it be?

(b) Is it representative of the various sections of the architectural profession? If not, should it be?

(c) Should any change be made in the system of representation of Allied Societies?

(d) Should any change be made in *ex-officio* representation?

2.—Should any change be made in the system of classes of membership of the RIBA?

3.—Arising from 1 (a) and 2, to review the applications of the provisions of clause 4 (c) of the Supplemental Charter of 1925.

4.—To consider the effect on the charters and by-laws of any recommendations arising from the above, with particular reference to By-law 34 as to the election, tenure of office, etc., of the Council.

5.—To make recommendations to the Council on all these matters.

Summary of Recommendations and Action

Principal recommendations made and Council's action thereon are as follow:—

The Licentiateship: The Committee recommended that from December 31, 1955, further admissions to the Licentiateship be discontinued. This recommendation was approved by the Council on December 7 last and the notice to that effect published in January last.

The Fellowship: The Committee's recommendation here was approved by the Council on January 4 in the following terms:—

"That in future admission be open to two classes only of corporate membership, the Associateship and the Fellowship: that the Fellowship be regarded in the nature of a senior section of the Royal Institute, composed of persons qualified by age, ability and experience in responsible positions in the practice of architecture."

The following extension of the foregoing principle was also approved by the Council with a view to making provision for the admission of suitable and qualified candidates engaged in research or literary work, teaching, etc., connected with architecture: "Associates engaged in other work may be regarded as eligible for the Fellowship if, in the opinion of the Council, their position and attainments make it desirable."

The Council approved of these principles being put into effect by slightly widening the interpretation of the term "position of responsibility," and they also approved the following further recommendation: "That all candidates without exception be required to submit to the Fellowship Examiners drawings and photographs or examples of work, and to attend for an interview which may, however, be dispensed with at the discretion of the Examiners." This wider interpretation of the provisions of the charters is within the competence of the Council and requires no amendment to the charters or by-laws.

The approval of these recommendations does not affect the status and treatment of existing Licentiates or the procedure for the admission of Licentiates to the Fellowship class, which remains as at present.

The new procedure for election to the Fellowship, involving submission of work to the Fellowship Examiners by all applicants, will come into force on January 1, 1956.

Entrance Fees and Subscriptions: The Committee reviewed the question of entrance fees and subscriptions, and on their advice the Council decided that there should, at any rate for the present, be no change in subscriptions, except that as from January 1, 1956, Associates proceeding to the Fellowship will pay no further entrance fee.

Constitution of the Council: The Committee's conclusion was neither in favour of a single list of corporate members nor of a strictly proportionate representation by classes. They thought, however, that there was some argument for a modification in the balance between Associate and Fellow members on the Council, and recommended:—

"That an amendment to By-law 28 (e) should be secured so as to provide for the elected members of Council to consist of nine Fellows, nine Associates, three Licentiates and nine Corporate members of any class." (Note: present proportions are 18 Fellows, nine Associates and three Licentiates). The Council approved this recommendation.

Machinery for putting this into operation will be that each year three Fellows, three Associates, one Licentiate and three Corporate members shall retire, and a single list of 10 Corporate members be voted for. From this list the three Fellows, three Associates and one Licentiate with the highest number of votes shall be elected to fill the vacancies reserved by class, and of the remaining candidates the three with the highest number of votes shall fill the three places reserved for Corporate members of any class.

Once the new system is in operation, these members would be elected for a three-year period in office. They would be eligible for re-election for a second period; but, as at present, would not be eligible to serve continuously for more than six years.

Honorary Officers: With regard to the Honorary Officers, the Council concurred in the Committee's view that the President, two Past-Presidents, four Vice-Presidents, Honorary Secretary and Honorary Treasurer ought to be Fellows, and that the present procedure for their appointment is right and proper.

Committees: The Committee then considered the *ex-officio* representatives and those nominated as representative of the Salaried and Official Architects' Committee. They saw no reason to make any change in regard to these, and the Council concurred in this view.

Chairmen of Committees: The Committee also gave attention to the question of the Chairmen of Committees of the RIBA generally being *ex-officio* members of Council. In view of the policy that every member of Council shall serve on one or more Committees and that all Committees should have in their membership one or more members of Council, it was agreed that there was no case for increasing the membership of the Council by the *ex-officio* appointment of Chairmen of Committees.

RIBA MAINTENANCE SCHOLARSHIPS IN ARCHITECTURE

General Particulars for 1955

THE Royal Institute of British Architects offer for award in July, 1955, the following Maintenance Scholarships in Architecture, tenable from October 1 next:—

The Howe Green fourth and fifth year Maintenance Scholarship of £40 to enable students who have passed the Intermediate stage to complete an approved course at a School of Architecture recognised for exemption from the RIBA Final Examination.

One RIBA Houston Maintenance Scholarship of a maximum value of £125 per annum. It is available for any stage of training at a recognised School of Architecture and is awarded in the first instance for one year. It is renewable from year to year.

The Hartley Hogarth Maintenance Scholarship to provide grants towards the fees for architectural study at a Recognised School of Architecture is available to any student or students who produce satisfactory evidence of having been resident in the Borough of Keighley for a period of 10 years prior to October 1 of the year in which the application is made. Its value will be that of the fees of the School of Architecture selected.

The Artists' General Benevolent Institution Maintenance Scholarship of a maximum of £125 per annum is available in the first instance for one year and renewable for two further periods of one year each.

An RIBA fourth and fifth year Maintenance Scholarship of £60 to enable a student who has passed the Intermediate stage to complete an approved course at a School of Architecture recognised for exemption from the RIBA Final Examination.

The Ralph Knott Memorial Maintenance Scholarship of a maximum value of £45 per annum (tenable only at the School of Architecture, The AA, London).

The Scholarships are intended to enable promising students of British nationality, whose parents or guardians have not the necessary means, to attend approved courses at the Schools of Architecture recognised for exemption from the RIBA examinations.

Applications for the Scholarships must be made to the Secretary to the Board of Architectural Education, RIBA, 66, Portland-place, London, W1, by June 29, except in the case of the Artists' General Benevolent Institution Maintenance Scholarship, the closing date for which is June 1.

News of the Week

ARCHITECTS' SALARIES

BECAUSE Camberwell Council have been unable to fill several vacancies on their architect's staff they have increased the maximum salaries for senior assistant architects by £200 a year. This brings the maximum salary for an architect holding such a position to £1,130.

The council have been told in a committee report that the vacancies and frequent changes of staff "have seriously hampered the work of the section."

QUANTITY SURVEYORS' FEES

AN ATTEMPT is to be made to get some clarification or amendment of the scale of charges for quantity surveyors' services in connection with flats erected by London borough councils. The action comes from the Metropolitan Boroughs' Standing Joint Committee, which represents London's 28 borough councils.

The committee is urging the Minister of Housing and Local Government to initiate discussions with the Royal Institution of Chartered Surveyors and other interested parties.

A report states that Bethnal Green Borough Council had drawn attention to problems of interpretation which had arisen in the working of the scale of charges for quantity surveyors in connection with flat dwellings of more than two storeys in height for local authorities.

Inquiries from other local councils indicated that the problems were widespread, particularly in relation to charges for omissions. In 1953 the district auditor disallowed an amount in the account of Deptford Borough Council in regard to quantity surveyors.

Says the committee report: "Attempts to apply the rigid interpretation resulting from this case have caused considerable administrative difficulties."

HOUSING MEDAL AWARDS

THE HOUSE at Linton-lane, Wetherby, designed by Mr. Hubert Bennett, FRIBA, West Riding County Architect, has been recommended by the awards committee for the East and West Ridings Region for an award of the Ministry of Housing and Local Government's Housing Medal and Diploma. The client for the house was Mr. Bennett's wife!

The Ministry announce that the presentation of the medals and diplomas will take place at the Royal Institute of British Architects on July 6 at 3 p.m.

SURVEYORS' AFLOAT

FOR their summer meeting, on June 18, the Royal Institution of Chartered Surveyors' Junior Organisation has arranged a trip through London's canals. The start is at 2.0 p.m. from the landing stage at the junction of Blomfield-road, W9, and Edgware-road, W2. Tea will be at "The Bridge House," overlooking Little Venice. Tickets: 8s. adults, 4s. 6d. children (including tea). Details from the Hon. Sec., at 12, Gt. George-street, SW1.

LANDSCAPE IN THE TOWN

IN THE next "Prospect" talk, the monthly series in the BBC Third Programme on current questions in architecture and town planning, Mr. Peter Shepheard, president of the Architectural Association, will discuss "Landscape in the Town." This will be broadcast on May 29 at 6.15 p.m. It will be repeated on June 2, at 11.5 p.m.

LEEDS REDEVELOPMENT

A TRANSFORMATION will take place in the York-road cleared area in Leeds if a new layout approved by the housing committee in principle, is confirmed by the town planning committee and the City Council. The scheme was prepared by Leeds City architect, Mr. R. A. H. Livett, OBE, ARIBA, and the site covers 51 acres. It provides for 1,149 dwellings and a population of nearly 4,000.

AA VISIT CANCELLED

THE AA proposed visit to Worthing and Parham Park arranged to take place on June 11 and the associated talk on June 9 have been cancelled.

EUROPEAN SCHOLARSHIP

MISS D. M. TAYLOR, ARIBA, has been awarded a European Scholarship under the Leverhulme Research Awards, 1955. She will study "Industrial architecture: the inter-relationships of building methods and aesthetics (Milan)."

APPOINTMENTS

PROFESSOR GORDON STEPHENSON, FRIBA, formerly professor of civic design at Liverpool University, has been appointed director of the University of Toronto's new Regional and Town Planning Department.

MR. D. E. OFFORD (41) Hull's deputy town planning officer since November, 1952, has been appointed housing and planning inspector of the Ministry of Housing and Local Government.

MR. DENYS HUDSON has been appointed borough engineer and surveyor to Hampstead Borough Council.

CHANGE OF ADDRESS

THE HEADQUARTERS OFFICES of the architect's department of the Newcastle Regional Hospital Board are now situated at Walker Gate Hospital, Benfield-road, Newcastle 6. (Tel.: 59141-2.)

PROFESSIONAL ANNOUNCEMENTS

MESSRS. J. S. GIBSON & GORDON, FF.RIBA, have taken into partnership MR. ADRIAN A. MONTAGU, FRIBA. They will practise under the name of MESSRS. J. S. GIBSON, GORDON & MONTAGU, at their present address, 2 Devonshire-terrace, Marylebone-rd., W1.

The firm of SERGEI KADLEIGH, WILLIAM WHITFIELD & PATRICK HORSBRUGH has amalgamated with the firm of RAGLAN SQUIRE & PARTNERS. In future both firms will carry on business under the name of RAGLAN SQUIRE & PARTNERS at 3, Hobart-pl., SW1.

MR. ALAN S. RAIMES, ARIBA, chartered architect, has recently started practice on his own account at Terminus-chambers, 6, Holborn-viaduct, London, EC1 (tel.: City 4201), where he would welcome trade literature.

FROM "THE BUILDER" OF 1855

Saturday, May 26, 1855

REWARD FOR SMOKE PREVENTION.—The Steam Collieries Association, at Newcastle upon Tyne, advertise, in the *Newcastle Chronicle*, their offer of a premium of £500 upon certain conditions, for the invention of an effectual method of preventing the emission of smoke from the chimneys of multitubular boilers.

ARCHITECTS' BENEVOLENT SOCIETY

Annual General Meeting

THE annual general meeting of the Architects' Benevolent Society was held at 66, Portland-place, W1, on May 4. Mr. C. H. Aslin, CBE (president RIBA), was re-elected president; Mr. H. S. Goodhart-Rendel, CBE, P-PRIBA, was re-elected honorary treasurer, and Mr. Howard Lobb, CBE, FRIBA, was re-elected honorary secretary. The vice-presidents and council were elected for the year 1955-56. Mr. R. O. Foster was elected honorary auditor in the place of the late Sir Harry Vanderpant. THE PRESIDENT paid tribute to Sir Harry's keen interest in and generous support of the Society. Mr. Aslin, in moving the adoption of the annual report, said:—

The general position of the Society appears to be stationary as regards income, though present-day conditions have made the needs greater, and there are many opportunities which the Society would like to take for improving the lot of those who apply for help.

The Homes Scheme is one very important way of helping the old people, so that they may have comfort and security in their last years. For this fund we are very much indebted to the energetic Ball Committee for the sums raised annually by the ABS Ball.

We are very grateful indeed to our local representatives and to the Allied Societies and other architectural organisations for all they have done to further the aims of the Society, and we hope they will continue their efforts to bring in new subscribers. We need the support of all the profession, whether at the beginning of a career or already established, and whether in private practice or in public offices.

A very small subscription from every architect or assistant, which sum could be increased in proportion to the progress of their career, would make all the difference to the amount of good that the Society could do. May I ask all our contributors to make the Society and its activities known to their friends and colleagues, and to try to persuade them to support this very necessary and useful work.

MORE HELP GIVEN

MR. HOWARD LOBB, in presenting the annual report, said:— It will be noted from the report and accounts that subscriptions and donations were about the same as in the previous year, but more applicants were helped during the year, although the total amount distributed was, regrettably, less than before because of the drop in income. We received more in legacies in 1954, and this money has been invested, in strict accordance with the by-laws. A further investment was made for the Leonard Solomon Memorial Fund.

"A new pension was founded from Sir Banister Fletcher's legacy, and it is hoped to found another in due course from the investment of accumulated interest. This second pension will also, in accordance with Sir Banister Fletcher's will, be available for fellows or associates of the RIBA or their widows. . . ."

A small committee was formed to consider what action should be taken for increasing the number of subscribers to the Society.

A RE-TASTING OF KENT

Observations on a Spring Tour

A VISIT to old friends rarely coincides with perfect spring weather: when one's host is Kent's County Planning Officer, who is prepared to alter his plans so as to conduct a busman's-holiday tour of part of his area, the combination is rarer, and I made the most of it. I felt these notes might convey some of such infectious enthusiasm to those who, like myself, have not seen Kent lately, and that their "scrambled" itinerary might be excused as at least suggesting the enjoyment of relaxed "busmanship" in both conductor and passenger. James W. R. Adams, OBE, a second-generation planner and landscape architect (of whose Institute he is, of course, President) has emphatic but well-balanced views. He apparently uses the light hand on a comparatively taut rein, applying powers of veto sparingly and then constructively, and delegates strictly architectural matters (NB) to architects. This, and his brief but trenchant contribution to the AA debate on Aesthetic Control, made one want to hear more of a machine which deals—singularly unmechanically, it proves—with some 15,000 development applications yearly, and to see the result on the ground.

Such a planners' piece of cake as Kent cannot be without its sad spots and pips as well as plums, and some of what I heard must be off the record—of certain flats, for instance; wild surmises will not drag from me more than that a happy landfall below those white cliffs is by no means sure. But there is much else good to hear of a county which has a particular but elusive flavour, where the conflicting claims of development and preservation must be unusually hard to reconcile.

Approached from Town, the few remaining Regency elegancies of Camberwell and beyond, embedded now like bright fragments in a rockery of blitz and flats, lead comparatively suddenly, but gently, into the green which is conversely mosaic'd into the unpretentious little gardens while urbanity extends fingers outwards. This may be the key to its charm: is it too far-fetched to think of Kent as London's special garden—more so than Essex or even Surrey—because of something lingering from the waterman, the hop-picker, the market gardener, to whom London is "just at the end of the road," his own market or turn-around?

First re-sight of the Weald showed the familiar rich-to-purple of turned earth shot with chalk, with lilac distances above viridian grass in the fertile convolutions below the ridge. So far, so good—probably judicious avoidance of skyline development is the clue. Dropping down to *Maidstone*, a brisk trot round the County Hall must set an accelerating pace for what follows. Items: well-displayed selections from the archives. The Knatchbull Collection of portraits, likeable rather than first-rate but with some treasures. A Dickensian, virtually untouched 19th C. Crown Court of Assize. Interesting talk with E. W. Berridge, Principal Divisional PO (Architecture) and joint author with Adams of "Notes for the Guidance of Developers" whose constructive precepts, if heeded, must reduce horror-comic submissions referred to by Adams at AA.

Southwards, an indefinable roadside orderliness and decency—laugh on me for not having immediately spotted absence of general outdoor advertising, I having once rashly addressed Summer School of Town Planning at Adams' invitation on this subject, but hardly hoping to see it come about. First view of *Tenterden*: charm partly due to scale and proportion of buildings to street and verges, but more to uncalculated homogeneity of four centuries packed shoulder to shoulder and all still "working"—not a mummification.

Transport converted (apparently willingly) to "hackneyed" carriage for sake of painter of party who had never seen *Rye* or *Winchelsea*. The former condonably corny, even to Ye Olde Fudge-forges (rumme flavour smuggled?) and an art show boat in the cut. The latter a different kettle of well-preserved fish, lovely as ever, the debated church glass entirely justified by its colour. Excellently compatible recent housing scheme. Easy to make sophisticated noises, but there isn't really much choice between over-preservation and over-petrol-pumping, and a plan of pump frequency, seen at HQ, was revealing evidence of success in stopping one piece of rot.

SPAB'S INFLUENCE

At *Cranbrook*, town and gown, as it were, effectively interspersed to social and architectural benefit of both: conducted tour taken over by son-of-family, old boy of school. Glad that an honourable "retirement" is probable for still-working windmill. At *Larkfield*, a timbered house SPAB-whitened all over, i.e., including beams—remarkably successful: laugh on empurpled purists oblivious of fact that it probably looked quite like this originally, black-and-white "uniform" being largely a stockbroker's dream. On *Sittingbourne* road, just S. of "Chiltern Hundreds" pub in Maidstone parish, group of newish houses suggests snag in principle of individual approval, overall effect being itchy and incompatible though not all equally bad separately. Elsewhere, new schemes coherent, discreetly "contemporary," already partly blotted-up by greenery.

Sunday walk conducted by host's biddable Labrador, *via* Saxon hill-fort to top of ridge, princely view—and earned pint. Afternoon, *Trottiscliff* and other son-of-family's well self-converted cottage: homage to, and pleasant memories of, Graham Sutherland's white weatherboarding in passing. Home from *Wrotham*: problem of reconciling purists to BBC transmitting mast, detested by them but necessary, and to me (also to painter of party) elegant punctuation to landscape.

From this brief tasting, all's well still with the Kentish brew—and good planning is keeping it that way.

BASIL MARRIOTT.

CRICKET

RIBA XI Draw with Vitruvians

THE ANNUAL MATCH between the RIBA XI and the Vitruvians was played on May 18 at Boreham Wood, and left as a draw after a keen and most enjoyable game played in blustery weather. Accurate bowling and keen ground fielding, taken with a slow outfield, made the architects fight for runs, and, Smyth and Bishop apart, none of the batsmen faced the bowling of Dowson and Mudie with any real confidence. Left with nearly two hours to get 108, Mudie and Boswell put on 46 for the first wicket without being in any trouble, but all the time were behind the clock, and the remaining batsmen never succeeded in catching up against accurate slow bowling by Smyth, Norton and Batty. Scores:

RIBA

A. Marlow b Mudie	3
G Batty b Mudie	9
B. Smyth st Leslie b Hart	26
L. Bishop c and b Dowson	29
P. R. Davison lbw b Hart	5
R. H. Holmes st Leslie b Hart	0
G. R. Linfield c and b Binfield	6
W. W. Atkinson b Dowson	9
R. R. Fairbairn st Leslie b Mudie	10
D. S. Taylor c Matthews b Dowson	0
R. Norton not out	2
Extras	9
Total	108

Bowling

Mudie 14.1-4-21-2 Hart 7-1-16-3
Dowson 13-1-34-4 Binfield 2-0-5-1

VITRUVIANS

R. Mudie b Smyth	27
D. Boswell lbw b Smyth	31
A. Boyd c Batty b Smyth	6
R. Dowson c Marlow b Batty	10
R. Hart st Holmes b Batty	4
F. Matthews c and b Smyth	2
A. Watts b Smyth	0
W. A. K. Faldo not out	2
R. Binfield not out	0
I. M. Leslie did not bat	
Extras (2 wides)	2
Total (for 7 wickets)	84

Bowling

Smyth 16-6-16-5 Batty 13-3-36-2

National Federation v. Vitruvians

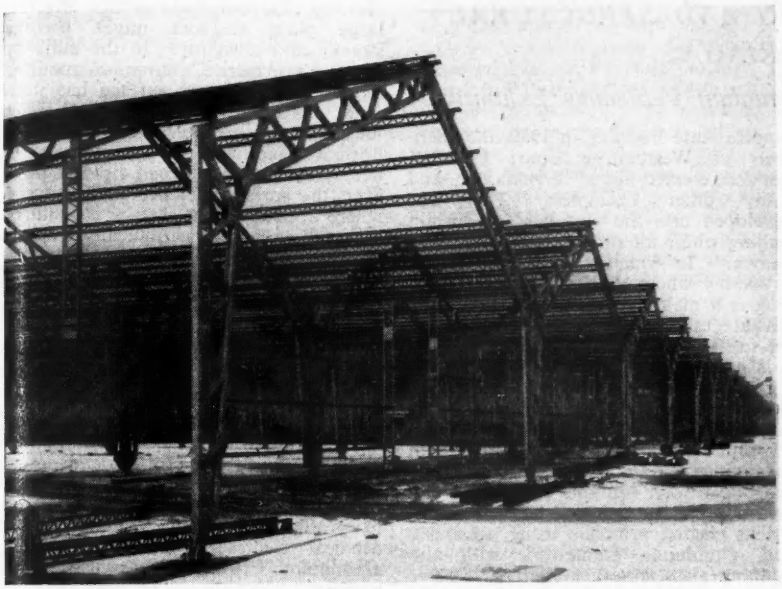
THE annual cricket match between the Vitruvians and the National Federation of Building Trades Employers will be played at the Richmond Cricket Club ground, Richmond, on Thursday, June 2. The first ball of the game will be bowled by Mr. Harvey G. Frost, OBE, FIOB, the National President, at 11.30 a.m. Teams:

NATIONAL FEDERATION

J. A. Bird (Liverpool Region) (Captain), V. R. Blake (Eastern), R. E. Costain (Liverpool), B. J. Garrett (London), B. W. Gregory (Southern), P. H. P. Lovell (Southern), K. C. Kerridge (Eastern), C. S. Kidman (Eastern), F. Morton (Southern), F. J. Munnion (Southern), R. W. Triggs (London), 12th man, W. D. Bryant (National Federation). Umpire, P. J. Flitton. Scorer, C. Moisey.

VITRUVIANS

R. D. Mudie (*Architects' Journal*), A. L. Watts (*Illustrated Carpenter and Builder*), R. Dowson (*Architect and Building News*), W. A. K. Faldo (*Official Architecture and Planning*), I. M. Leslie (*Builder*) (Captain), D. Boswell, A. Boyd, W. Franklyn, J. G. Batty, R. Hart, J. Kennedy Hawkes, 12th man and scorer, R. Binfield (*Contract Journal*), Umpire, L. McCarthy (*Contract Journal*).



Steelwork in course of erection.

STORAGE BUILDING WITH FABRICATED COLD-ROLLED STEEL STRIP FRAME

THIS new storage building erected in the North of England, covers an area of more than 750,000 sq. ft., and has been constructed on a building technique recently developed by the Tube Investments subsidiary, Metal Sections, Ltd., of Oldbury. In less than 14 months, the building was designed, fabricated, delivered to the site and erected on its foundations. During this period, the general contractors, Sir Alfred McAlpine and Sons, Ltd., cleared and levelled the virgin site, and laid 28,000 tons of concrete.

In the same period, Metal Sections, Ltd., produced and manipulated more than 1,400 tons of steelwork, involving over 2m. ft. of cold formed sections; in addition to this, some four miles of gutter sections, together with all the necessary fittings, were also produced and erected. It is estimated that this project will be completed from start to finish in about 20 months.

The basic design centres round a prefabricated three-pin arch manufactured from cold formed sections. The use of cold formed sections in this design gives a remarkably high strength-weight ratio. This ratio has been achieved by the use of a design technique which enables stiffeners to be inserted in the main frame sections at the most appropriate points determined by a load analysis of the structure.

Special anti-corrosion measures are taken with the whole of the steel framework, and where the steelwork is in contact with the foundation, heavy grey iron castings are provided.

Site assembly, it is claimed, can be carried out by unskilled labour, and without the use of special equipment. All other components used on the building, such as sheeting rails, purlins, bracings, etc., are delivered to the site as completed components, and no site work is necessary other than erection.

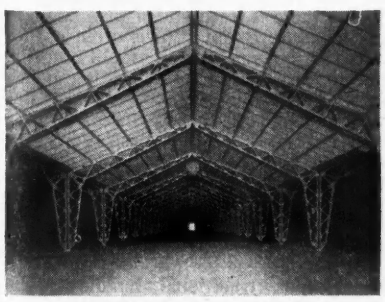
The economic and technical advantages of this method of building are summarised by the makers as follows:—

(1) It cuts building time compared with general methods by at least 30 per cent.

(2) The structural members are designed to give a constant stress value throughout the framework, which gives a high strength/weight ratio, resulting in as much as a 40 per cent. saving in steel over conventional steelwork.

(3) When compared with any other finished building of equivalent specification, the system shows an advantage of at least 10 per cent. saving on the total cost.

This constructional technique can be applied to many types of buildings at home and overseas, and a study is now being made to test its uses for domestic and school buildings.



Interior view showing steelwork and lining board.

BIRMINGHAM OVERSPILL

Private Building Using Up Housing Sites

SO much private building was being carried out in Warwickshire recently that it might reduce the county's capacity to house overspill population from Birmingham, a report by Warwickshire Town and Country Planning Committee states.

The report, to be presented to the county council on June 1, says that in 1953 it was estimated that 975 council houses for Birmingham residents could be built in Warwickshire each year for the first five years of the overspill programme. Since then, however, the building of private houses in the county has increased so greatly that much of the land thought to be available for the purpose has been developed.

The committee suggests that the county planning officer and the surveyors of the six district councils concerned, should prepare a plan showing what land suitable for overspill accommodation remains, so that a revised estimate can be prepared of the contribution which Warwickshire could make in the first few years of the scheme.

As a result of the recent conference between the Minister of Housing and representatives of Birmingham City Council and the County Councils of Warwickshire, Worcestershire and Staffordshire, the Minister may reduce the amount of land in Birmingham which is zoned for industrial development. It was pointed out at the conference, the report says, that the number of jobs available in Birmingham attracted many people from outside and that if the population of the city was to be reduced, industry as well as residents must be exported from Birmingham.

The next step in the overspill campaign, the report says, will be a discussion on joint policy between the three county councils concerned. It is hoped to follow this by a meeting with Birmingham representatives to discover whether the city council will agree to the Minister's proposal that Birmingham should pay to receiving authorities the rate fund contribution for every overspill house for 10 years after it is built.

OBITUARY

J. S. Wilson, Hon.ARIBA, MICE

WE REGRET to announce the death of Mr. John Sigismund Wilson, Hon. ARIBA, MICE, of Borham, Sussex.

Alderman John Privett, MA

IT IS with regret that the death is announced, following an operation, of Alderman John Privett, MA (of Messrs. Frank J. Privett Ltd., Portsmouth), at the age of 46. He was educated at Brighton College and Queens' College, Cambridge, where he gained his BA and MA degrees, subsequently joining the building firm founded by his father. His career in municipal affairs included election to the City Council at the age of 23 and election as Lord Mayor in 1949 (when he was one of the youngest in the City's records), and he was created Alderman two years later. He was President of the Portsmouth Builders' Association in 1951. Among his many other local interests, he was a Director of Portsmouth Football Club. He was unmarried.

ALUMINIUM IN BUILDING AND STRUCTURAL ENGINEERING

A Paper at the Forthcoming Aluminium Centenary Exhibition

A PAPER on "Building and Structural Engineering" to be given jointly by MR. J. M. SMITH and MR. A. F. HARE, ARIBA, at the Aluminium Centenary Exhibition, which is to be held at the Royal Festival Hall, London, from June 1 to 10, has now been released, and a summary is reproduced below.

Structural Engineering

Dealing with the structural engineering aspect of their paper, the authors list a number of well-known buildings in which aluminium has been used for structural purposes, including the Dome of Discovery at the Festival of Britain in 1951; a hangar with three 150-ft. spans at London Airport, also built in 1951; a recently completed hangar at the de Havilland Aircraft Co's. works at Hatfield, with a 217-ft. span between centres of pins; the telescopic gangways at the Ocean Terminal, Southampton; and the Arvida Bridge, Canada, the Sunderland Bridge and the Bascule Bridge, Aberdeen.

Concluding this section of their paper the authors state: In the future, aluminium will find its natural element in the shape of very large-span bridges, where the self-weight is the major load to be carried and where maintenance costs would otherwise be a considerable item of recurring expenditure. The immediate foreseeable use, however, is unquestionably for redecking of existing bridges in order to increase the number of traffic lanes at the expense of footways, which will be placed on the outside of the main girders. The weight thus saved can offset the increased live load.

Building

On the uses of aluminium in building the authors state: In nearly every sphere of building aluminium is now a well-known and accepted material with case histories extending back 50 to 60 years of roof and wall cladding, framing, components, fittings, decoration, services, etc. There are innumerable examples within these categories, but even so the special properties of aluminium are still not fully utilised.

Since the cupola of the Church of San Gioacchino was covered with aluminium sheet in 1897, fully supported roof sheeting has been developed in various forms, the best known contemporary examples being the many school roofs clad in aluminium. Corrugated roofing and wall cladding is used throughout the world, and at the present time British Standards for corrugated aluminium roofing sheets are in preparation.

Aluminium roof decking, troughed sheets and interlocking tiles from sheet are further examples of recent applications where aluminium is statutorily accepted as a permanent roofing material by its inclusion in the Model Bye-laws. Wall cladding offers even more scope for development. As a background there is the sheeting of many industrial buildings, the cast aluminium spandrels of the Empire State Building in 1930, the spandrels of Westbourne Court Flats in London, erected about 20 years ago, and many other examples. This has developed into the vast field of curtain walling where aluminium is already well-known. In America, with multi-storey structures where the weight of the cladding is a major consideration, the many advantages of aluminium have made this the most prominent of all materials and it is used in a variety of forms, including fabricated panels, sheet pressings, extruded framing, cast or extruded spandrels, etc. So far in the States, about 30 buildings are constructed with aluminium curtain walls and many more are under way. In this country several methods are based upon the well-known patent glazing principle using an extruded aluminium framework with aluminium, glass, or other filler panels.

Much has been achieved, but this is only the beginning of a vast development of "dry construction" which bids fair to revolutionise building. Collaboration between designers and industry is most necessary. Architects understand most of the problems, with emphasis on expansion and waterproofing, mechanical joints, etc., but to realise fully the advantages of a material it must be used with understanding of its nature and characteristics. Here is the opportunity for the aluminium industry to help in the development of this technique.

CURTAIN WALLING

The principle requirements for curtain walling obviously include light weight combined with structural strength to resist wind pressure; and for ease of handling aluminium certainly possesses these properties. Site jointing requires a material suitable for producing various sections and shapes necessary to incorporate the requirements of all types of joints. These joints must allow for expansion, or even for the whole wall to breathe, and still provide complete water resistance. The forming of aluminium sheet, and particularly the use of aluminium extrusions, allows limitless scope for the designers in this field. The exhibits will give some idea of the vast range of extruded shapes that are possible.

Next in importance come durability, maintenance and appearance. The "concealed" members of the sub-framing are often located within a cavity where they cannot be inspected. The cavity may be ventilated or exposed to moist air from the building before reaching the vapour barrier. Aluminium is naturally resistant to corrosion, so if the surface is scratched or damaged in handling or fixing, there is no fear that it will deteriorate.

For the exposed surfaces, durability is allied to appearance. With untreated aluminium the surface may become slightly roughened due to oxidation, and will pick up dirt. It may be some time before this weathering is uniform and although the durability is not affected, large plain surfaces might become streaky and unsightly. In the majority of cases in America, aluminium anodised with a medium grey surface has been used. This is quite attractive and seems ideal for uniform weathering. Under normal conditions no maintenance is necessary. In many urban districts, however, the surface will become dirty and where a clean bright surface is required it should be washed periodically. Facings of this description can be protected during erection by a coating of strippable lacquer or lanolin.

For architectural effect, contrasts are required in form, texture and colour. The ease of fabrication of aluminium sheet is a technique which has barely been used by architects, but the American wall panel in the forthcoming exhibition is one example in this field. Aluminium castings provide scope for intricate design and pattern, whilst spandrels fabricated from extrusions allow endless flexibility to profile—as in the spandrels to a Medical Centre in Minnesota where aluminium extrusions are used with marble flank walls. The play of light and dark of the metal profiles sets off the mass of smooth marble facing.

For large plain areas there are a number of ribbed and surfaced textured sheets; the effect is interesting but it may be advisable to use these in easily accessible positions in case dirt is picked up.

Colour anodising has long been used internally and the production of "fast colours" by anodising is said to be well advanced; this will certainly increase the range of surface finishes. Pyluminising is a type of chemical treatment giving the pleasing green finish which will be seen on the interlocking tiles in the exhibition. Vitreous enamelling is also possible in a variety of colours.

The blending of aluminium with other building materials is obviously desirable. Here a valuable characteristic is the absence of staining from aluminium—particularly important where there is weeping from cills, copings, etc. Queries are often raised regarding contact between aluminium and other metals, cementitious materials, certain soils, etc. Where there is the risk of moisture there should be some protection but once this is understood it is a simple matter, easily prevented by proper insulation.

USE ON OLD BUILDINGS

In America, aluminium is one of the most popular materials as a wall facing for the re-modelling of old buildings. Where there is freedom for planning and the structure is sound, it is often economical to renovate and re-mould both the interior and exterior of existing buildings. The whole of the defective or unsightly wall is re-faced. Cornices, etc., are demolished and the fenestration often re-planned. The new cladding may be ¼-in. thick anodised aluminium sheet combined with various extrusions giving a completely new façade, and providing additional weather-proofing.

Much that has been done is obviously based upon traditional building techniques. This has given us experience but much still remains to be done to utilise fully all the properties of aluminium.

LAW REPORTS

Architect Awarded Damages for Infringement of Copyright of Plans

HIGH COURT CHANCERY DIVISION: BEFORE MR. JUSTICE UPJOHN

BRANSON v. A. E. MARKS, LTD.

AN action by Mr. Anthony H. C. Branson, ARIBA, of Thornhill, Oak-lane, Sevenoaks, against A. E. Marks, Ltd., builders, of Imperial-square, Cheltenham, and Mr. D. A. Gunn, of Hilton Lodge, Westall Green, Cheltenham, was mentioned to Mr. Justice Upjohn, in the Chancery Division on May 18, when Mr. F. E. Skone James, for the plaintiff, said the defendants were consenting to an order against them.

Mr. Branson, said counsel, was an architect and was the owner of the copyright in the plans of a house in Bournside-road, Cheltenham. A. E. Marks, Ltd. were employed by Mr. Gunn to build a house which plaintiff alleged was an infringement of his copyright in his plans. Defendants admitted that there was an infringement and consented to the injunction claimed and to pay damages and costs.

The injunction was to restrain the defendants perpetually from infringing plaintiff's copyright in his plans of the house in Bournside-road and in the features and artistic characters and designs created in the house by reproducing or authorising the reproduction without plaintiff's consent of any copies or colourable imitations of his plans; or by constructing any house (other than the house the construction of which was commenced at the date of the issue of the writ) by reproducing plaintiff's plans or designs.

Defendants, added counsel, also agreed to pay Mr. Branson £105 damages and the costs of the action. A sum of £52 in court would be paid out to plaintiff.

Mr. F. B. Alcock, for the defendants, assented and an order was made as asked.

Payment of Extra Expenses Arising from Errors in Bills of Quantities

COURT OF APPEAL: BEFORE LORDS JUSTICES DENNING, BIRKETT AND ROMER.

ORLIT, LTD. v. WM. LOGAN AND SONS, LTD.

THE question whether a promise by Orlit, Ltd., of Buckingham Gate, London, SW, to re-imburse William Logan and Sons, Ltd., builders, of Evelyn-street, Deptford, SE, for extra expenses incurred as a result of errors in bills of quantities was binding, was considered by the Court of Appeal on May 11.

Orlit, Ltd., appealed against a judgment by Mr. W. K. Carter, QC, Official Referee, given in favour of Logan's. The court dismissed the appeal.

Giving judgment, LORD JUSTICE DENNING said that in 1950 Wembley Borough Council decided to have a block of flats built at King's Drive. They employed Circle Construction, Ltd., who sub-contracted some of the work.

A question arose regarding frame-work which it was proposed to erect with special components made by Orlit's, who were not builders. At first Orlit's proposed to take the contract by getting sub-contractors to do the work. They prepared bills of quantities and handed them to Logan's, who gave them a price to do the work.

Orlit's put in a tender, but thinking it might be considered a little too high, suggested that Logan's should put in a tender and do the work, Orlit's providing the materials. Logan's did this and got the contract.

In the course of the work, Logan's discovered errors and omissions in the bills of quantities prepared by Orlit's, which meant it would cost more to do the work. A representative of Logan's met a representative from Orlit's and made a complaint to him. Orlit's promised to re-imburse Logan's for any extras incurred. These, as a result of the errors in the bills of quantities, came to £2,818. Logan's now claimed this sum from Orlit's.

For Orlit's, his lordship said, it was contended that the conversation between the representatives of the two companies did not mean that the promise to re-imburse was binding, so there was no consideration for it. The Official Referee said he thought there was a consideration because it was a *bona fide* compromise of a claim and a promise by Logan's to perform their obligations to Wembley Council. He gave judgment for Logan's for the sum claimed.

Lord Justice Denning agreed with the findings of the Official Referee and thought the appeal should be dismissed.

Lords Justices Birkett and Romer agreed.

£275 Damages Awarded Against Builder for Breach of Warranty

QUEEN'S BENCH DIVISION: BEFORE MR. JUSTICE JONES.

JENNINGS v. TAVENER

MR. JACK LOCKHART HARRY TAVENER, a builder, of Chingford Mount-road, Chingford, Essex, was ordered to pay £275 damages by Mr. Justice Jones in the Queen's Bench Division on May 11, in an action arising out of a bungalow he constructed at Gunners-grove, Chingford, in 1949-50.

The plaintiff was Mrs. Minnie Joan Jennings, a widow, of Gunners-grove, Chingford, and administratrix of the estate of her late husband, Mr. Ronald Raymond George Jennings, who died in September, 1950.

She claimed damages against Mr. Tavener for breach of contract, alleging negligent construction of the bungalow.

Mr. Tavener denied the allegation and contended that the bungalow was constructed with sound materials and workmanship, in accordance with the building by-laws, and to the satisfaction of the Chingford Borough Council.

MR. CYRIL HARVEY, QC, for the plaintiff, said that in June, 1949, Mr. Jennings began inquiries to purchase a bungalow at Gunners-grove, Chingford, which was being erected by the defendant. The price was to be £1,566 and in August, 1949, he paid a deposit of £160. A formal contract was completed in February, 1950, the bungalow finished in May, 1950, and the Jennings moved into it the same month.

By June, 1950, a crack appeared in the brickwork in a flank wall which Mr. and Mrs. Jennings had noticed when the bungalow was being erected and which the defendant has put right. Later, cracks began to appear at an alarming rate and although informed, Mr. Tavener did not inspect them until the middle of 1951.

Mr. Harvey said the reason for the defects was that the foundations, which were too shallow, were laid where roots of poplar trees were present. The trees were visible 30 to 35 ft. at the rear in a cemetery.

As the roots were not cut or removed by the defendant, they sucked the moisture out of the lower levels of the sub-soil which was of firm clay, and had caused the sub-soil to contract and the house to settle.

He submitted that as the poplar trees were quite visible, any competent builder ought to have known of their danger.

Mr. Harvey said the trees had since been removed from the cemetery and there had been no further trouble to the property.

MR. H. PHILLIMORE, QC, for the defendant, submitted that Mrs. Jennings had no remedy against the defendant. Through ignorance prevalent in the trade at the time, the bungalow was built in circumstances and conditions in which it became defective, because of the trees. There was no evidence that the bungalow was not a perfectly and properly built dwelling. The date on which the roots of the trees first began to affect the house was not clear.

If Mr. Tavener handed over the bungalow at the date of completion and it was properly built in accordance with existing trade knowledge that was all he could be required to do.

Giving judgment, MR. JUSTICE JONES said the defendant should have known at the time that the poplar trees were likely to cause damage because literature had been published to warn builders of the dangers. It was certain that if he had employed an architect to supervise the work and inspect the site he would have known of the dangers caused by the presence of trees.

The question that had to be decided was the nature of the warranty which was implied in the case of the sale of a house in course of construction. In his lordship's view it was established that the bungalow was not in a state fit for human habitation and had not been built in a workmanlike manner when handed over by the defendant to the plaintiff's husband.

This was because the defendants had failed to take the necessary steps to prevent settlement of the walls which resulted inevitably in cracks.

There had been a breach of the warranty implied in the case of the sale of a house in the course of construction. The obligation on the defendant was not confined to building the parts of the house above the ground but extended to the provision of proper foundations and the building of the foundations in places where they would not collapse. The defendant had assumed the responsibility of the site and building without an architect and failed to provide the plaintiff's husband with a bungalow fit for human habitation as he omitted to have regard to the well-known danger that the site of a house might be made unfit because moisture might be extracted from the subsoil by the roots of poplar trees. He had not prevented the reoccurrence of the cracks by cutting the roots at a distance from the house or by asking the cemetery authorities to do so.

His lordship said the damages had been agreed, subject to liability, at £275 and he would give judgment for the plaintiff for that amount.

THE SOUTH BANK

Progress Made on Site

THIS spring, the beginning of further constructional works on the South Bank site marks another step towards the completion of the permanent development scheme proposed for that site. The scheme includes provision for a National Theatre, riverside hotel, international headquarters for the Shell Petroleum Co., Ltd., air terminal, extensions to the north block of County Hall, an exhibition gallery and the completion of the Royal Festival Hall. Several of the proposals have already been carried out, including the National Film Theatre, air terminal, riverside walk and restaurant.

The constructional works which have been begun recently include work on the foundations for the extension of the north block of County Hall, by Messrs. Higgs and Hill, under the direction of the London County Council's Chief Engineer. Work is to begin soon on the re-alignment of Belvedere-road, and will be followed by work on the re-alignment of Chicheley-street. These two schemes are expected to be completed by the end of 1956.

The outline proposals of the Shell Petroleum Co., Ltd., for an international headquarters which have received the LCC's planning consent, follow the lines indicated in the Council's scheme. The building upstream of Hungerford Bridge consists of an open-sided court of 10 floors linked to a tall tower block facing a new square proposed between the National Theatre and the hotel. This square is to be laid out as an open space up to the river. The office building downstream consists of an "L" shaped block 10 storeys in height with a three-storey annexe linked to it and adjoining Belvedere-road.

The Council has agreed to the company's proposal to increase the height of the tower block to approximately 330 ft., and discussions are continuing between the LCC and the company. The latter will submit detailed drawings for final town planning approval later.

AIR TERMINAL

British European Airways have decided not to go ahead with their earlier plans for a permanent air terminal on the South Bank site, but to seek a suitable alternative. The LCC have given the company preliminary notice of its intention to determine the lease of the South Bank site at Michaelmas, 1957, and BEA have said that the new terminal would be at Cromwell Curve, near Gloucester-road Underground station, Kensington, and that it is intended to open it in September, 1957.

The South Bank land originally allocated for the air terminal in the Council's permanent development scheme is now included in the lease to the Shell Petroleum Co., Ltd. It will be used at basement level for a private car park for the company's offices; and at ground level the area will be laid out as an open space.

The Council's permanent development scheme included car parks underneath the open spaces in the area and they are seeking Parliamentary powers to construct them. Meanwhile preliminary plans are being prepared for an underground garage for about 250 cars beneath the open space on the downstream section of the site. The Shot Tower will be demolished before building of this underground garage commences.

The gardens between Belvedere-road and the river will be affected by the construction of the garages and the widening and re-alignment of Belvedere-road, and it is hoped to include in the new gardens the Thames-side Restaurant and a children's playground. Negotiations are still in progress between the Council and the developers of the National Theatre and the hotel. Mr. Brian O'Rorke, ARA, FRIBA, is the architect for the National Theatre scheme.

LCC

Development Delays in the City

AT a meeting of the London County Council on May 10, Mr. A. E. RENESON COUCHER asked the chairman of the Town Planning Committee whether he had seen reports in the Press of development delays extending over years which were alleged to be due in part to conflicting requirements of the City Corporation and the Council, and, if so, would he kindly state whether the present procedure did not at times result in delays which might be avoided or reduced? If there were such delays, would he consider arranging for consultations (where they were necessary) between the officers of the City Corporation and of the Council to take place at the earliest possible moment after the making of the planning application to either of the respective authorities?

Would he also consider conferring with the City Corporation as to the advisability of setting up a joint sub-committee of the planning committees of the two authorities to examine development schemes of importance at the earliest practicable moment with a view to their making recommendations thereon to their respective committees? In addition, would he consider generally other ways in which development applications could be more speedily dealt with without detriment to planning excellence?

MR. RICHARD EDMONDS said that he had seen the reports to which Mr. Coucher referred. He said that the present procedure was laid down by statutory instrument. While delegation to the City Corporation of the power of dealing with applications, subject to the agreement of this Council, might sometimes mean a longer time for consideration, it must be appreciated that the City had a special financial responsibility and applicants always had a right of appeal. Regular consultations between officers were in fact held, when the applications made were discussed. He thought that a sub-committee was hardly necessary or desirable as a general rule, but representatives of the City and of the Council did confer as necessary on problems of importance. An instance at present was the area north of Route 11. In the case of the area around St. Paul's, the Minister was taking the chair at a small informal committee on which both authorities were represented. He felt that their collaboration had never been stronger than it was to-day. He added that an O. and M. and staff inspection investigation of the planning division of the Architect's Department had recently taken place. One of the subjects considered was methods for speeding up the consideration of applications.

Council Form of Declaration

AT THE same meeting of the Council, MR. NORMAN FARMER asked the chairman of the General Purposes Committee whether, regarding the form of declaration which had to be signed by all sub-contractors to the Council, any decision had been arrived at to modify this custom.

MR. R. E. GOODWIN said that very few firms were required to sign any material number of declarations in relation to the 700-800 specialist firms from whom sub-contract quotations were invited. The signing of the declaration was obtained through the main contractor and was intended not only as an undertaking to the Council but also as a guarantee to the main contractor that the sub-contractor would observe the fair wages clause. While some additional work might be involved, it was so slight and spread among so many firms that it was not held to outweigh the protection given. In these circumstances, no change in the present procedure could be advised.

Council Form of Building Contract

MR. NORMAN FARMER also asked the chairman of the General Purposes Committee a question regarding the Council's form of building contract. Would the chairman indicate whether the discussions between the Council's officers and various trade associations had now been finalised and had any amicable decision been arrived at?

MR. GOODWIN said that the officer representatives of the associations of local authorities had reached agreement on a draft form of contract, which had been forwarded to the Joint Contract Tribunal, who still had the proposals under consideration. He added that the General Purposes Committee at their meeting on May 9 had accepted an invitation which had been extended to the local authority associations and to the Council to be represented on the Joint Contracts Tribunal.

SOLAR HEATER INVENTION

Sun's Rays Utilised

AUSTRALIANS may soon be installing equipment in their homes which will use the sun to provide a hot water service. The Australian Commonwealth Scientific and Industrial Research Organisation has developed a solar heater which utilises the sun's radiation for heating water for domestic and industrial purposes.

The solar heaters consist of an absorber covered by sheets of glass. Water circulates through tubes in the absorber and then runs into an insulated storage tank. The CSIRO says several manufacturers are considering the production of solar absorbers, although they are not yet readily available throughout Australia.

It says another use for solar installations is in the production of fresh water from brine solutions, and that solar stills may ultimately prove the cheapest method of providing water for livestock in arid areas.

The scientists believe that the abundance of sunshine in Australia is one of the country's greatest assets, and the wider employment of solar installations would ensure a fuller use of this source of energy to improve arid areas.

HARLOW'S SOCIAL AMENITIES

Use of Tenants' Common Rooms

THE progress so far made with developing the social amenities of the new town of Harlow was described in a talk at the Housing Centre, London, on April 19, by MR. L. E. WHITE, liaison officer to the Harlow Development Corporation. In particular, Mr. White gave an account of the building of what are termed at Harlow "tenants' common rooms," which are small halls deliberately sited in or near the centres of the neighbourhood units into which the new town is divided. These common rooms, structurally permanent buildings, have been planned in order to encourage the formation and expansion of social clubs and organisations of all kinds and provide meeting places for the local residents. Later, it is hoped, these small halls will either be enlarged or replaced by larger buildings, but at the moment they make a valuable kind of jumping-off ground for social activities.

There had been some continuing criticism, in Parliament and outside Parliament generally, about the lack of social amenities in the new towns, said Mr. White. Some of the sterner critics would claim that it was the story of the big housing estates all over again and that great opportunities were being missed. He claimed that it was not true of Harlow and he doubted whether it was true of the other towns either.

PLANNING NEEDED

A great deal was dependent on having buildings right at the start of the development in which the people could meet. That presupposed some plan; you must have some idea of where you were going.

Referring to a large-scale map of Harlow, Mr. White stated that the new town was divided up into four main quarters or neighbourhoods, with a target population for each of about 20,000. The first neighbourhood was now nearly completed. It was made up of a cluster of smaller neighbourhoods grouped about a main centre. It was assumed that at the centre of the main neighbourhood would be a community centre and dotted about in the housing neighbourhoods smaller tenants' common rooms or community centres, one to each group of 600 to 700 houses.

Explaining why the Development Corporation had placed so much faith in the building of the small tenants' common rooms, Mr. White said one reason was that they discovered that it was possible to erect them as part of the housing contract and make them an integral part of the housing layout. The architect liked it that way. There were sometimes differences with the architect, but these had been resolved and eight of these small halls, integrated with housing schemes, had been built in several parts of the town.

Secondly, the general manager, Mr. Eric Adams, had had experience of a pioneer scheme of this kind in a London borough where he had been town clerk.

Thirdly, the Development Corporation had actively encouraged the formation of community and residents' associations in the town and these seemed to be the proper bodies from which small groups of local residents would emerge to run these small community buildings.

The first small common room was built experimentally during 1950 and at the end of its first year housed something like 40 voluntary organisations and paved the way for the first community centre scheme, for which an old vicarage was taken over and a hall added behind it. Now there were about 150 voluntary organisations in the new town, said Mr. White. If you added groups associated with the various churches you would find nearly another 100 organisations.

The small halls or tenants' common rooms were built to take from 50 to 100 people. They varied not only in size but in architecture. The large ones had a committee room in addition to the main meeting hall. The average cost at the present moment was between £3,000 and £3,500 per building.

The Corporation had also just started to build another, larger, community centre to serve the south-eastern quarter of the town. In the north-west quarter there were converted old houses ready to come into use as social centres when an association to be launched in the next few weeks was ready to take them over. The churches had also built three new halls of their own. One large secondary modern school housed a youth club in the evenings with a membership of 600.

Mr. White said the next stage, after the provision and first use of the tenants' common rooms, was for various groups to want their own separate accommodation and some would like to put up their own huts or take over old buildings. He did not think that the Development Corporation would like to feel that in a town with architecture of the quality of that in Harlow there would be a lot of huts set up in various places.

BUILDING EDUCATION

Far-reaching Influence of New Board

MR. HARVEY G. FROST, OBE, National president, speaking at the luncheon on the occasion of the half-yearly general meeting of the Southern Counties Federation of Building Trades Employers, at Tunbridge Wells, on Tuesday, said that the decision of the Institute of Builders to set up a Board of Building Education would have a far-reaching influence on the future of the building industry. That was why the National Federation had agreed to be represented on the new Board and had pledged its full support.

"For some time it has been clear that, bearing in mind the changes in practice and methods since the war, the training facilities for the executive, administrative and managerial grades in building require overhauling and extending," said Mr. Frost. "It is appropriate, therefore, that the Institute of Builders—whose major responsibility in this field we acknowledge—should make this welcome move to set up a body to bring this part of the industry's training system into line with current needs and to secure the general recognition of proper standards and qualifications."

FOREST PRODUCTS RESEARCH

Strength of Timber Struts

"THE STRENGTH OF TIMBER STRUTS," Forest Products Research Special Report No. 9, was published on May 18 for the DSIR.

This publication gives details of the results of tests made on timber struts of the type used in light constructional work. The struts covered a wide range of size and quality, the woods used being Douglas fir, Sitka spruce, Scots pine and Baltic redwood.

Various theoretical formulae and the assumptions on which they are based are stated and their application to timber is discussed in relation to the test results.

The paper deals with the use of statistics in the estimation of working stresses and with the use of readings of lateral deflection when estimating the crippling load of timber struts.

Design of Laminated Beams

FOREST Products Research Special Report No. 10 "Laminated Beams from Two Species of Timber" was also published on May 18 for DSIR.

Laminated timber construction enables large members to be made from relatively small stock, permits a uniformly dry condition to be obtained through large sections and makes possible the tapering of structural members to conform to the pattern of loads likely to be encountered in service. These are significant advantages over conventional solid timber construction. By gluing comparatively thin laminations of a dense strong species of wood to a core of a less dense weaker species the advantages of laminated construction can be further improved. This type of mixed species construction can result in a reduction in the cost of the materials or an improvement in the specific strength characteristics of a member.

The design of laminated beams of mixed species, however, is complex and adequate methods have not yet been developed. FPR Special Report No. 10 describes an investigation in which a theoretical analysis of the stresses in two-species beams is made. It is shown theoretically that for a given quantity of material maximum strength is obtained when the thickness of the dense material on the compression surface of a beam is greater than on the tension surface. Equations are given for calculating the strength properties of any form of construction from the basic properties of the timber species used. These equations were checked against the results of tests on actual sections and were found to be reasonably accurate. Methods are also given from which the required quantity of each species can be ascertained so that the resulting beam will be the lightest possible or the cheapest in cost of materials.

The investigation has shown that two-species beams have definite advantages in regard to strength characteristics and that this type of construction provides one method of reducing the cost of laminated timber construction.

Both these publications were published for DSIR by HM Stationery Office, price 1s. 6d. each.

WATER FOR BUILDING

London Borough Councils Call for Metered Supply

LONDON'S borough councils are not satisfied with reductions which have been proposed by the Metropolitan Water Board in the charges for supply of water to building sites. The councils consider that the Board should permit metered supplies of water for all capital schemes.

A report by the Metropolitan Boroughs' Standing Joint Committee states that in November, 1953, Battersea Borough Council called attention to the Metropolitan Water Board's practice of basing their charges for the supply of water to building sites on the percentage of the value of the work being carried out. The borough council contended that this often resulted in a serious addition to the building costs, which could be minimised if builders could insist on a metered supply, but that under existing legislation the Board had the power to determine the terms on which the water should be supplied.

The report continues: "We felt that the point was of importance as it affects the cost of houses erected by, or for, local authorities. Representations were made to the Board, who stated that certain proposals for revising the charges were being considered. We asked that before any definite decision was taken by the Board we should be consulted on the matter.

"The Board now states that they have decided to reduce the standard rate of charge for unmetered supplies of water for building purposes from 5s. per £100 of the probable cost of the building to 4s. per £100.

The scale proposed is 4s. per £100 for the first £50,000 of the contract price, 3s. 2d. per £100 for the next £100,000 and 2s. 10d. per £100 for the balance of any contract price.

While welcoming the reduction in charges, the standing joint committee feels that on capital schemes, as opposed to maintenance and repair works, the reduction was insufficient and that the only equitable method of charging in these cases was by means of a metered supply.

IDENTICAL STEELWORK TENDERS

Birmingham Protest

FOUR tenders received by the Birmingham Corporation for structural steelwork were identical to the last shilling—£2,242 8s. 0d., less 2½ per cent., but one quoted a delivery date eight weeks earlier than the others.

Now the City Council may ask the Monopolies Commission to investigate the tenders. Speaking on May 18, CLLR. DENNIS HOWELL claimed that the tenders showed "a new development in local price rings."

He said that the quoting by one firm of an earlier delivery date was "obviously a new way in which the ring decides which firm shall get the contract."

The tender was finally given to E. C. and J. Keay, Ltd., of Henley-in-Arden, and others tendering were Rubery Owen and Co., Ltd., of Darlaston; Charles Wade and Co., Birmingham; and Wilfred Robbins, Great Bridge, Tipton.

"More frequently we receive just one tender lower than the others. In this way the Corporation is held to ransom and has no real choice of contractor or price," said Cllr. Howell. "Anyone responsible for public money must be alarmed by these price rings, and wonder whether prices are being forced up."

The four tenders just received were for steelwork at the new Judge's lodgings at Edgbaston Grove.

An executive of one of the firms later said: "On the bottom of the architect's drawing for the building is the weight of steel required for it. The price for the work is calculated from this figure. From experience gained by the Steelworkers' Association during the time when prices were checked over by Government Departments there is a fixed price for steel erected."

LCC to Offer Evidence

REPRESENTATIONS to the President of the Board of Trade, urging that tendering arrangements in the steel industry should be referred to the Monopolies Commission, were decided on by London County Council general purposes committee on Monday (May 23). They also decided to inform the President that they were prepared to submit written and oral evidence to the commission.

MR. PETER THORNEYCROFT, President of the Board of Trade, stated at Chepstow on May 13, that the subject of steel frames for buildings is to be referred to the Monopolies Commission.

BUILDING BOARD IMPORTS

Association on Need for More Cautious Import Policy

THE annual general meeting of the Building Board Manufacturers' Association of Great Britain, Ltd., was held in London on May 17.

MR. C. FORD, the chairman, said in his report that most of the year under review had been one of continued high demand, and production of the home mills had been the highest ever attained. Since the surcease of import restrictions at the end of November, 1954, however, official statistics had revealed that overall imports of fibre building boards had been of an extremely high level, considerably more, in fact, than could be reasonably absorbed. It was hoped, therefore, that a more cautious importation policy would be adopted by all concerned in the industry in order to maintain a stable and healthy market for both home and imported boards.

The Fibre Building Board Development Organisation, Ltd., now nearing the completion of its second year of life, he continued, had during the last year achieved considerable success in promoting the use of their products and, above all, "combating existing ill-founded prejudices." The Association had supported FIDOR in its many activities and had pledged continued support for at least a further five years, providing that the purposes for which it was founded remained unchanged.

Mr. C. Ford was unanimously re-elected chairman for the second successive year. Mr. Frank Morley was re-elected vice-chairman and Mr. G. H. Peters, hon. treasurer.

DETERIORATION OF DOMESTIC FLUES

1,000 *Builders to Help in BRS Project*

THE deterioration of flues and chimney stacks serving domestic slow-combustion stoves and boilers is a common source of trouble to householders. External symptoms of the trouble include distortion of the stack, disintegration of the mortar, cracking of the brickwork joints or rendering, and staining of the brickwork or rendering. Internally there may be unsightly staining of the plasterwork. It is not perhaps generally realised that all these effects may arise from within the flue.*

Methods of dealing with the trouble are to form the subject of the next full-scale research trial which the National Federation of Building Trades Employers is to carry out in collaboration with the Building Research Station. First, however, states the National Federation, the Station is anxious to have the benefit of information relating to the actual experiences of building firms in regard to this particular problem. Consequently the Federation's research and technical information committee has issued to 1,000 house-builder members a simple questionnaire asking how many stacks have been dealt with in the past 12 months and for details of the repair work and treatment carried out, both internally and externally. The replies will be sent direct to the Building Research Station within a week, and when they have been studied the final details of the research trial will be formulated.

Full-scale research trials resulting from collaboration between the Building Research Station and the National Federation started some 12 months ago. Experiments already under way are concerned with air-entrained mortars for rendering and zinc oxychloride dry rot treatments.

LAND FOR NEW SCHOOLS

"Grab" Policy Criticised

CRITICISM of the "grab" of land for educational purposes was made on May 9, at the quarterly meeting of Shrewsbury Town Council. CLLR. J. H. T. SMOUT said that during the past few years the education authority seemed to put out its hand for a piece of land and "grab or freeze" it. Close to the Monkmoor Hotel there was an area of land which a land agent would call "very desirable building ground." He was told that the education authority had "frozen" 28 acres there. It was fantastic and extravagant waste. He did not want to see them back at the old type of schools, but he thought it was time the housing committee crossed swords with the education committee. If necessary, they should go to Whitehall for satisfaction. Education started in the home and was the basis of a child's education. They needed houses.

Cllr. Smout received support from ALD. A. H. JONES, who, besides being a borough alderman, is chairman of Salop County Council's planning committee. He said the amount of land allocated was laid down by the Ministry. That amount had been reduced in the last two years. "I am of the opinion, both from an educational side and from the planning side, that it could be reduced still further without detriment," he added.

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* *The problem is discussed in some detail in Building Research Station Digest No. 60.*

INQUIRY BUREAU

Smoking Flue Problem

Q.—We are experiencing considerable trouble with a smoking flue. The wall of the main house rises to a height of approximately 38 ft. above the ground floor level, and the height of our present stack is approximately 20 ft. above ground floor level. There was previously a chimney in this same area, but 10 ft. closer to the main wall. This chimney had originally served fireplaces, but latterly took the flues from a domestic hot water boiler and a four-oven Aga cooker. The height of the stack would be approximately the same as now and there was no complaint of down draught.

Our client asked that a large stone fireplace should be installed in the dining-room, and knowing that difficulties are encountered with such fireplaces we suggested that he used a "Bell" type canopy grate, but he would not agree to this and we therefore fitted a 24-in. fire-back and well fire. The fire burns fairly satisfactorily until the wind is in the east, in which case the room is unusable as the smoke will not go up the flue.

We have temporarily raised the stack by 12 ft. without any improvement whatsoever. We are aware that the throat of the grate is not in accordance with the Building Research Station's recommendations, but we are afraid to attempt to effect a cure by this means without further advice.

We have also thought of using a "Baxi" fire with an under-floor ventilator on the east side, but we feel that with a large opening such as this grate has, even this may not be successful, as when a window is opened under bad conditions no improvement occurs.

We wish to again stress the point that a previous chimney stack was apparently successful with an Aga cooker and boiler, and we should appreciate any help that you could give us on this matter. (The present flue runs up straight from the fire with a bend to the side at roof level.)

S. P. J.

A.—Since no trouble was experienced with a flue in a position closely related to the present flue and assuming that there has not been any change in the roof contours or extensive growing of trees, then I feel quite certain that the fault lies in the fixing of the new appliance.

The Coal Utilisation Council, in common with the Building Research Station, have carried out extensive experimental work and investigation into the causes of smoky chimneys and have found that the majority of such chimneys have been cured simply by reducing the throat of the flue just above the appliance.

Realising that there is always the possibility that this is not the cause of the trouble, reluctance to advise a client to have the work carried out can be appreciated. With this in mind I suggest a temporary measure which would produce the answer without requiring any structural alteration. This temporary measure would entail making a throat in light gauge zinc of a shape that would ensure considerable reduction in the space above the fireplace, which could be inserted into the throat and sealed at the edges with lime mortar. Should this prove to be satisfactory, then a permanent alteration can be made to the throat with confidence.

Regarding the comment on the "Baxi" type fire, while this has many features to commend it, it is very doubtful if it would, in fact, help in this case, particularly in view of the comment regarding the opening of windows.

Should the suggestion made not prove successful, then I would advise an approach to the technical service of the Coal Utilisation Council, who are ready at all times to advise on problems relating to solid fuel appliances. H. O. D.

Brick Flaking Problem

Q.—My house, which is semi-detached with the exposed wall flush with the pavement of the adjoining road has been erected some 70 years, and although the wall shows no sign of dampness, approximately one-third to one-half of the bricks are very badly flaking, so much so that in a few instances the face has come away to a depth of ¼ in. to ½ in.

The bricks in question are a Leicestershire pressed facing. The trouble has become more pronounced during the past ten years. It is now disfiguring and the pieces are dropping so that something must be done. We propose to render the wall but it is quite imperative that the brickwork should be treated with some preparation to make sure that the flaking does not continue and lift the rendering.

Will you please let us know whether you can recommend something that would solve this problem. H. C. S.

A.—There are two probable causes of bricks flaking, the presence of salts in the brick or mortar in which they are laid, or because the bricks have been insufficiently burnt, the former being the more likely. These salts may be in the bricks, in the sand used for the mortar or in the soil at the base of the wall. Since the building is some 70 years old it is unlikely that the bricks or mortar still retain salts from the time of building, and therefore must be obtaining these by absorption from the surrounding ground. These salts, being soluble, will be carried up in solution from the natural ground moisture into the brickwork and the bedding material. Under the action of drying winds these salts will tend to be drawn to the surface and form crystalline deposits. Subsequent rains will wash them from the surface, carry them to the surrounding ground and the whole process becomes continuous.

Since it is stated that the building in question is built of Leicestershire pressed facings, and these being a fairly dense brick, it is reasonable to suppose that such salts that have been drawn up the wall have at some time or other been restricted by, I suspect, the use of a very dense pointing material. Finding it impossible to escape through the lime mortar bedding, these salts have collected behind the bricks and, because of the expansion that takes place when the salts become crystalline, the faces of the bricks have been pushed off.

It will be appreciated that with this in mind, a surface treatment to the wall before rendering would be useless since it would not be long before the rendering itself would start coming away from the wall. I feel certain that if this trouble has developed over the last ten years and that prior to that the wall had been pointed with a strong sand and cement pointing, then attention must be given to the damp course, for it is there that the source of the trouble lies. Having corrected this fault, then a sand and cement rendering can be applied without any other form of treatment. It would be an advantage to coat the whole surface with a "spatter-dash" coat 1-2 cement sand before applying the rendering coat. This spatter dash is, as its name suggests, dashed on to the wall in a wet state, thus forming an excellent key for the subsequent rendering.

Returning to the possibility of the bricks being under-burnt, this can be quite easily tested since the bricks become soft and powdery as against the bricks subjected to salts remaining in themselves quite hard, but, of course, spalling at the face. If the bricks are under-burnt and through the action of the elements, particularly frost, are falling away from the face, a straightforward rendering would be quite satisfactory since the rendering would then act as a protective skin. H. O. D.

Alterations to Council Property

Q. — The Council have decided to modernise my house by providing electric light and hot water. A combined hot and cold tank is used for the hot-water system, and the council intend to destroy the amenities of the smallest bedroom by removing the fireplace and fixing the tank on the existing hearth. This will project about 32 in. from the wall.

When the houses were built a linen cupboard was provided for any future hot-water supply and, although I have protested, and suggested alternative positions, the council are adamant, unless I pay additional rent of up to 6s. 3d. per week.

I should be grateful if you could give me your advice. Would it be in order to make a complaint to the Minister of Housing? A. F.

A.—A legal correspondent writes:—The general position is that a landlord has no right to enter the premises so long as the tenancy lasts, except in so far as he is authorised to do so under the terms of the tenancy; of course, if a landlord is responsible for repairs he has the right also to enter the premises at all reasonable times for the purpose of inspecting the premises and carrying out repairs. The right to enter to carry out repairs does not entitle the landlord to make alterations to the premises without the tenant's consent.

I imagine, however, that your correspondent has only a weekly tenancy so that if he objects to what the authority are doing the tenancy can be brought to an end by a week's notice to quit. If he feels that the authority are acting unreasonably, there is nothing to stop him from writing either to the Minister personally or to the Secretary of the Ministry of Housing and Local Government. It is by no means certain, however, that the Ministry would be willing to take any action. Although there is a statutory right of complaint to the Ministry in certain cases under the Housing Act, 1936, I do not think that it applies in the present case. In any event to exercise the statutory right of complaint he would have to obtain the support of at least three other ratepayers. A. E. T.

ESTIMATING DAYLIGHTING IN NEW BUILDINGS

(*Continued from page* 870.)

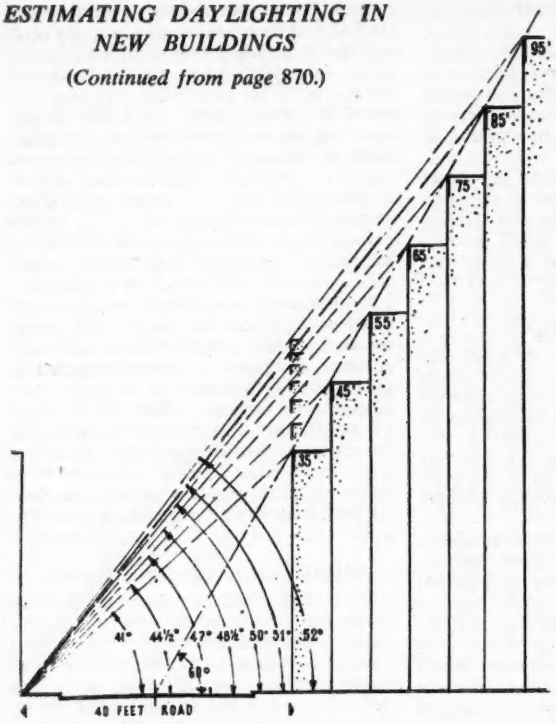


Fig. 3.—*Permissible height indicator A.*1. *Effect when operated from the centre of a road.*

row but deep area of sky, as when a window receives light from a gap between two relatively high buildings. The second and third indicators cover intermediate conditions between these two extremes and the four indicators in each group are alternatives, the most suitable being selected to meet the particular requirements of any point on the line under test.

RANGE CRITICISED

Each indicator can be described in terms of its horizontal and vertical angle and the four groups have accordingly been plotted in these terms on the graph in Fig. 2. Each curve links the four points identified by the angular co-ordinates of the indicator and, in theory, a building layout which passes the test of an indicator having angular co-ordinates falling at any point on the curve would be satisfactory. In practice, it has been decided that the system would be unduly complicated if more than four indicators in each group were provided, and thus it is possible for a scheme, failing to comply with one of the limited range of indicators provided, still to be capable of meeting the daylighting requirements of the Code. There is accordingly a criticism of the indicators that they fail to provide a sufficiently wide range of tests, although it has also been said that a system involving sixteen different indicators is still too cumbersome for ordinary use.

Another point frequently referred to is that the indicators are suitable only for testing completed layouts and that they provide little assistance to those wishing to use them as instruments for design. Any criticism on this score is perhaps unfair because it goes outside the purpose for which the indicators were originally conceived, but it would clearly be advantageous if the position could be met.

It will be noted that there are two different types of indicator: those for use from street centre lines and plot boundaries (Groups A and B), and those for use between buildings on the same plot (Groups C and D). The second type is simple in operation and easily comprehensible since the indicators state direct relationships between different building blocks, and it is doubtless these which correctly express the author's intentions as to the daylighting standards to be achieved. The first type is, however, more complex in its effect.

OVERCOMING A PROBLEM

These indicators were introduced in order to provide a method for overcoming the difficult problem of safeguarding the daylighting of future buildings the size and shape of which are not known at the time when the development under consideration is being proceeded with. The results are not entirely satisfactory. In order to illustrate the effect of, for example, the A1 indicator, Fig. 3 shows what may happen when it is operated from the centre of a 40 ft. wide road. The sheer height permissible at the back edge of the pavement is about 35 ft. and then, above this level, successive storeys are stepped back within the 60 deg. vertical angle to the maximum height of the building. Alternatively, the building may be set back from the pavement edge according to the sheer height required.

So far as daylighting is concerned, the importance of the angular control provided by the indicator lies in its effect upon the ground-floor room of the building on the opposite side of the street. It is sufficient for the present purpose to measure the angle formed by the line joining the topmost point of the building under consideration with the back edge of the opposite pavement in order to obtain an approximate picture of the effect of the new building upon the daylighting of a facing building. Fig. 3 shows that for the building heights selected this angle may vary between 41 deg. and 52 deg. It will also be noticed that, as the total height of the building is increased, so the sheer height could also be increased without detriment to the daylighting of a facing building. For example, at the overall height of 95 ft. the sheer height could safely be increased from 35 ft. to 50 ft.

If reference is made to the C group of indicators it is found that the vertical angle employed in the C1 indicator is 40 deg. and it may be assumed, therefore, that the A1 indicator is intended to produce an angular obstruction of this order after it has been applied in opposite directions from the centre line of a street.

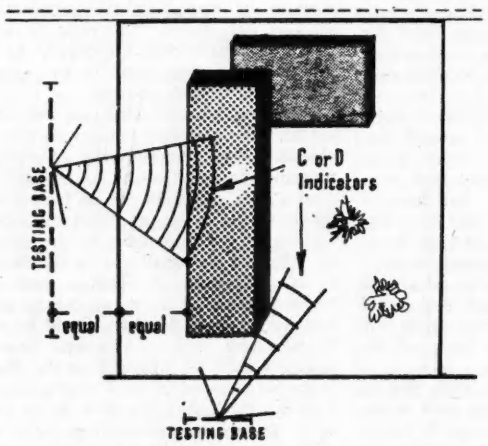


Fig. 4.—*Testing a simple rectangular building across a plot boundary.*

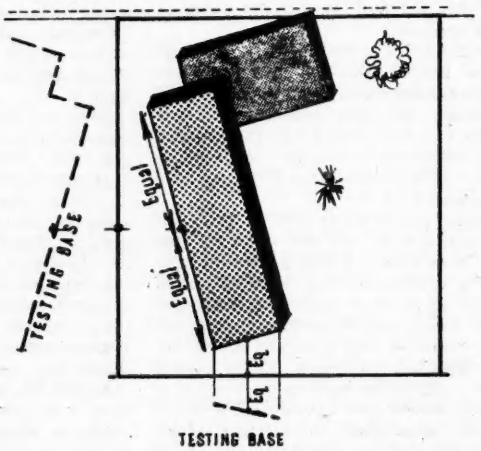


Fig. 5.—*Testing a rectangular building across a divergent plot boundary.*

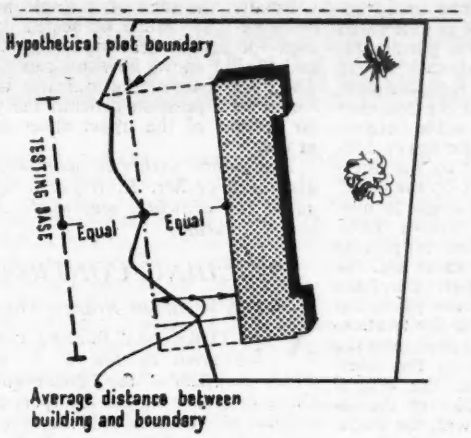


Fig. 6.—Testing a rectangular building across an irregular plot boundary.

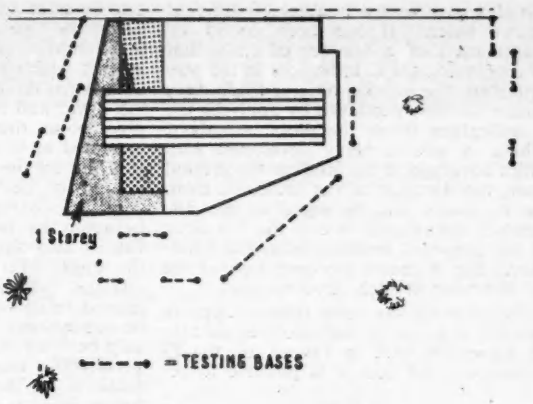


Fig. 7.—Testing bases—a more complex case.

In fact, almost precisely this result is achieved if two conditions are satisfied:

(i) Neither of the two opposite buildings has any setbacks above the sheer height, and

(ii) Both the buildings are the same height.

In the densely developed areas of Central London it is unusual to encounter a building complying with the first condition. The second condition is not invariably satisfied, but it is more likely to be satisfied than the first because planning control pays particular regard to street architecture and uniformity of cornice level. An additional reason is that adjoining buildings generally have a similar bulk and plot ratio.

With all these considerations in mind, it is suggested that the Code can be simplified by dispensing with the group of A indicators and, instead, employing the group of C indicators by operating them from the back edge of the opposite pavement. In this way, many of the incongruities mentioned above would be eliminated.

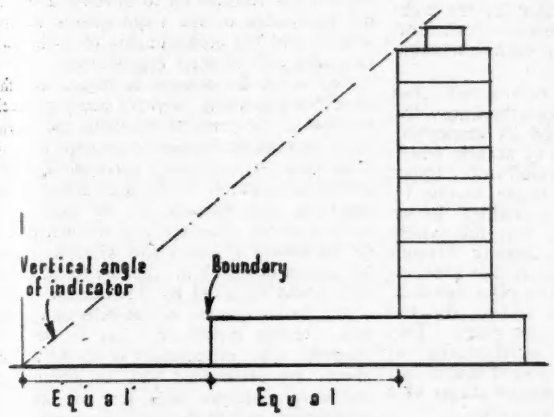


Fig. 8.—A case involving entire coverage of the site at ground level.

LINE OF OPERATION

The A indicators are, however, also employed from plot boundaries and it is necessary to identify a line from which the C indicators could be operated in their stead. For this purpose it is proposed to adopt the principle that the adjoining owner should be protected on the assumption that he will elect to construct a building similar to that being tested. The rule which follows from acceptance of this principle is that the C indicators should be operated from a line drawn opposite to the face of the proposed building and at a distance from it equal to twice its distance from the plot boundary. This is a comparatively simple operation when the boundary is a straight line, the building a simple rectangle in plan and the building face and boundary parallel to each other. Fig. 4 illustrates a case in these circumstances and shows how the testing bases are set up before applying the indicators.

The position is more complex when the boundary line and the building face diverge. After examining a number of possible methods of drawing the testing base it is proposed that the simple mirror principle should be adopted, as shown in Fig. 5. In practice, the outline of the obstructing façades can be traced on paper, which is then reversed about the boundary line. When the boundary is an irregular or curved line, it is useful to indicate a hypothetical plot boundary, as shown in Fig. 6. Fig. 7 illustrates a more

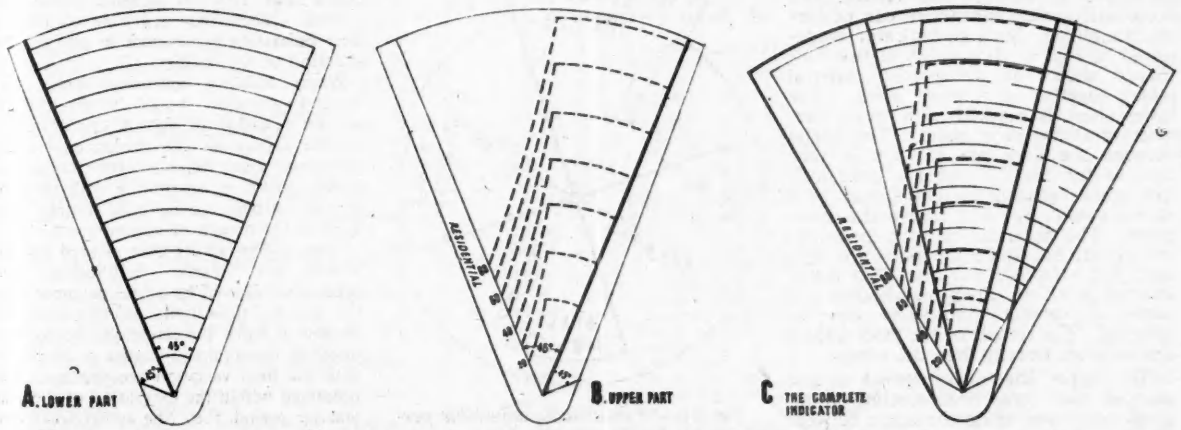


Fig. 9.—An adjustable permissible height indicator.

complex case with a number of different testing bases. It has been found by examination of a number of cases that by employing the C indicators in the way described the results obtained are very similar to those produced by applying the A indicators from the plot boundary. Where a site is being developed with entire coverage of the land on the ground floor, the distance of the indicator from the boundary will be equal to the distance of the vertical face of the first floor of the proposed building from the boundary. Fig. 8 shows the operation of the C1 indicator in such circumstances.

By adopting the same rules it appears that the B group of indicators could also be dispensed with in favour of the D indicators, and thus it is possible to reduce the total number of indicators from sixteen to eight, and at the same time to achieve some important advantages by reducing the considerable fluctuations in daylighting which the present method allows.

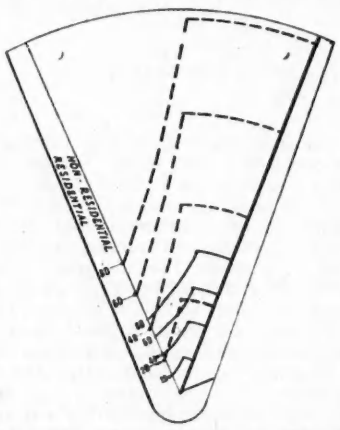


Fig. 10.—An adjustable permissible height indicator for both residential and non-residential buildings.

AN ADJUSTABLE INDICATOR

There still remains the fact that each group of four indicators represents only four points on a curve of the graph shown in Fig. 2. By using for each group one indicator which is adjustable but which maintains the relationships expressed by the curve as between the vertical and horizontal angles, the system can be further simplified. Such an indicator is suggested in Fig. 9. It consists of two fan-shaped sheets of transparent material joined together at a pivot point. The lower sheet is marked with three lines meeting at the pivot point. The angles between the lines are 45 deg. in each case as for the C1 and D1 indicators. The angle between the two longer lines is calibrated by arcs about the pivot point. The distances between these arcs are equal, but since the lines are only used for reference purposes, the actual interval is of no direct significance and some convenient dimension can be adopted. The central of the three lines is drawn more heavily than the others.

The upper sheet of material is also marked with three lines meeting at the pivot point and again the angle between the lines is 45 deg. in each case. Again, also, the central line is drawn more heavily than the others. The space between the two longer lines is calibrated by curves representing permissible heights which are plotted in such a way that, when the upper sheet is placed over the lower and moved about the common pivot point, then the permissible heights, indicated at points along the heavy central line on the lower sheet by the intersections of the height curves on the upper sheet, are correct for the angle formed between the two heavily drawn lines. Fig. 9 also shows the effect of placing the upper over the lower sheet and the changes which occur when they are moved relatively on the pivot point can be appreciated. In each case the relationship between the horizontal angle and the permissible heights shown at the intersections of the curves and the central heavy line on the lower part of the instrument is in accordance with the Code. It will be seen that the arcs on this lower part merely serve to carry the eye from the intersection points across the indicator and that they enjoy the permissible heights thus temporarily attributed to them.

AVOIDING CONFUSION

Fig. 9 represents the position with the D group of indicators. If the curves representing the C indicators are plotted over these, and printed in a different colour or notation as in Fig. 10, it is found that there is little chance of confusion. In this way it is possible to cover all the conditions envisaged by the eight indicators with one adjustable indicator, and also to deal with the infinite number of intermediate cases.

Such an indicator has been constructed of acetate sheet of medium thickness, the pivot point being formed by cementing to the lower sheet a disc of acetate which fits closely into a hole drilled in the upper sheet. The joint was made secure by cementing in position a slightly larger disc over the first disc and the whole pivot was completed by drilling through it a tapering central hole so that a pencil mark can be made on the plan beneath. All the markings were etched on the acetate and then filled with paint. This indicator has worked satisfactorily in practice and it has been found that it can be used to assist in the design stages of a layout in certain circumstances.

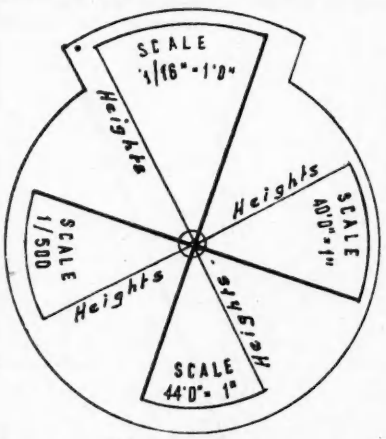


Fig. 11.—A multi-scale adjustable permissible height indicator for both residential and non-residential buildings.

Finally, the idea of a single indicator covering the range of scales normally used for layout drawings suggests itself, and Fig. 11 shows how this can be made. The lower part of the indicator is swung round to a position beneath the particular section of the upper sheet which is in use.

The author wishes to acknowledge the assistance of Mr. R. Roberts, who prepared the drawings and made the prototype indicator.

BUILDING CONTRACTS

IAAS Wealden Branch Meeting

A LECTURE on "Building Contracts" was given by MR. F. J. MEEKINS, FIAS, chairman of the London and Home Counties branch of the Incorporated Association of Architects and Surveyors, at a recent meeting of the Association's Wealden branch, held at the Old Ship Hotel, Brighton. The meeting was presided over by Mr. R. E. J. Harding, FIAS, chairman of the branch. In his talk, Mr. Meekins outlined various ways in which both time and money could be saved when handling contracts and the following extracts have been taken:

As soon as possible after the initial appointment of an architect for a building scheme, all other consultants, including quantity surveyors, should be appointed without any delay. This gives the architect their full co-operation from the start, and enables the consultants to develop a working knowledge of the requirements of the scheme and the commitments of their own time and that of their organisation.

Too much importance is placed on the idea that a quantity surveyor needs a specification at the time of receiving the drawings from which he has to prepare bills of quantities. As a quantity surveyor, I prefer specification notes. I like such information regarding the materials to be used to be written on the drawings, and when it comes to the matter of doors and windows I prefer that information in schedule form. Much time could be saved by this means.

On the completion of the bills of quantities, "tender procedure" has to be considered. Lists of contractors to be invited should be determined well in advance of the tender inquiries being sent out, and the contractors should be given approximately one month's advance notice that they are to be invited, and given some idea of the extent and type of scheme being considered. Then they are able to organise their estimating department to give the best attention to the inquiry.

When building operations have commenced, attention should be given to the prompt releasing of interim certificates. If by the failure of the professional people concerned these interim certificates are not issued strictly in accordance with the terms of the contract, the building contractor has a claim for breach of contract.

Also, if contractors were assured that they would get interim certificates issued promptly followed by actual payment within the specified time limits and that upon completion of work the retentions would be reduced to the minimum stated in the contract with the final variation account agreed and presented within the expiration of the maintenance period, they (the contractors) would be able to envisage a saving when tendering of about 2½ to 5 per cent.

The Builder

CURRENT PRICES OF MATERIALS

THE information given on these pages has been specially compiled for *The Builder* and is copyright. It is the intention that the details given should indicate fair average prices of materials, not necessarily the highest or the lowest. The prices apply to large quantities of materials loaded at works, delivered at London Stations or at site in London Area as stated. Prices for smaller quantities ex merchants warehouse will necessarily be higher so as to include the stocking and handling costs involved. Due to the exceptional circumstances now prevailing it is recommended that the prices of materials should be confirmed by inquiry from suppliers and merchants.

AGGREGATES AND SAND

Delivered site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

		£	s.	d.
Pit Ballast	per yd.	1	3	10
Pit Sand	"	1	2	11
Washed Sand	"	1	4	5
¾ in. Shingle	"	1	0	9
¾ in. Broken Brick	"	1	0	0
Pan Breeze	"		10	3
Fine or Coarse Foamed Slag Aggregate	per ton	3	0	9

2 yds. of fine and 2.6 yds. of coarse per ton

CEMENT, etc.

Including non-returnable jute sacks or paper bags.

Best British Portland Cement. Standard Specification delivered Charing Cross area.				
6-ton loads and upwards, site	per ton	4	16	6
1 to 6 tons, site	"	5	8	6
Rapid Hardening Cement in 6-ton loads and upwards to site	"	5	4	6
1 to 6 ton do. site	"	5	16	6
Aquacrete Water Repellent Cement. 32s. 6d. per ton on ordinary cement prices.				
Red, Buff or Khaki Colorcrete in 6-ton lots	"	6	18	0
Other colours according to colour.				
In 4-ton lots from 211s. 9d. to 435s. 9d. per ton.				
White Portland Cement	"	12	17	0
Under 1 ton	per cwt.		15	4
417 Cement (Ultra Rapid Hardening) in 6-ton lots and upwards	per ton	6	9	0
Super Cement (Waterproof), 32s. 6d. per ton above Portland Cement.				
Cullamix Tyrolean Finish, £9 4s. 3d. to £10 17s. 9d. (1-ton loads and upwards).				
Lightning and Ciment Fondu Brands High Aluminous cement, 6-ton lots and up	"	14	0	9
Stourbridge Fireclay, 6-ton loads at Railway Depot, London	"	6	2	3

BRICKS

Full Loads.

First Hard Stocks	per 1,000	11	7	0
Second Hard Stocks	"	10	11	0
Mild Stocks	"	8	16	6

All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.

2½ in. Nominal Fletton Bricks to sites in W.C.				
District Commons	"	5	13	0
Cellular do.	"	5	13	0
Keyed do.	"	5	15	0
Rustics	"	6	18	0
Cellular Rustics	"	6	18	0
Single Bullnose do.	"	6	13	0
Sandfaced	"	7	13	0
Best Blue Pressed Staffs (London Stations)	"	24	19	6
Do. Bullnose (London Stations)	"	25	13	6
Blue Wire Cuts (London Stations)	"	22	11	0
Midhurst Lime Bricks (London Sites)	"	10	3	0
Uxbridge Whites (London Sites)	"	9	6	6
Special Purpose Sandlime Bricks (London Sites)	"	7	14	0
2½ in. Best Stourbridge Fire Bricks (London Stations)	"	24	6	0
3 in. do. (London Stations)	"	29	3	3
2½ in. Machine - made Sandfaced Red Facings (London Sites)	"	13	19	6
2½ in. Machine-made Multi Red Facings (London Sites)	"	14	4	6
2½ in. Hand-made Sandfaced Red Facings (London Sites)	"	14	11	0
2½ in. Hand-made Sandfaced Multi-Colour Facings (London Sites)	"	14	11	0
Hand-made Sandfaced Cherry Red Facings. Berkshire district (London Sites)	"	17	5	6
Hand-made Sandfaced Multi-Colour Facings. Berkshire district (London Sites)	"	17	5	6
Rubber Bricks for gauged arches (London Sites)	per 1,000	41	10	0
2½ in. Surrey Clamp Burnt Multi Stock Facings (London Sites)	"	13	6	0
2½ in. Surrey Kiln Burnt Multi Stock Facings (London Sites)	"	14	4	6
Glazed Bricks (London Sites), White, Ivory, Brown—				
Stretchers	"	64	0	0
Headers	"	63	0	0
Quoins, Bullnose and 4½ in. Flats	"	80	0	0
Double Stretchers	"	85	0	0
Double Headers	"	77	10	0
One side and two ends	"	87	0	0
Two sides and one end	"	89	10	0
Splays and Squints	"	83	0	0

Cream and Buff £3 extra over White. Other colours, hard glaze, £8 10s. 0d. extra over White. All above prices plus 7½% for Best quality and plus 7½% less 10% for Second quality.

PARTITION SLABS, etc.

Delivered Central London Area.

	Minimum lorry loads.			
HOLLOW CLAY PARTITION BLOCKS (Keyed)				
*2 in.	140 yds.	per yd. sup.	4	3
*2½ in.	140 yds.	"	4	6
*3 in.	120 yds.	"	5	2
BUILDING BLOCKS (Keyed)				
*4 in. (6 cavity)	95 yds.	"	6	7
6 in. (8½" × 5½")	1250 Blocks	per 1000	25	14	0

*Half blocks at no extra charge.

CLINKER CONCRETE				
2 in.	100 yds.	per yd. sup.	3	7
2½ in.	85 yds.	"	4	2
3 in.	75 yds.	"	5	0
4 in.	55 yds.	"	6	2
CRANHAM				
2 in.		"	6	8
2½ in.		"	7	4
3 in.		"	8	7
4 in.		"	10	7
4½ in. Load bearing quality		"	11	8
FLOOR BLOCKS and FILLER TILES				
3 in. Floor Blocks 12 in. by 12 in. delivered in full lorry-loads		per 1,000	32	11	0
4 in. do.		"	34	18	0
5 in. do.		"	41	11	0
6 in. do.		"	46	16	0
7 in. do.		"	56	18	0
8 in. do.		"	66	14	0
10" × 3" × ½" Filler Tiles in multiples of 10 tiles		per 1,000 multiples	56	2	0
12" × 3" × ½" do.	do.	" "	63	17	0
10" × 4" × ½" do.	do.	" "	69	14	0

STONEWARE DRAIN PIPES, etc.

The following are the percentages to be added to the Standard List prices delivered London Area.

	Over 2 tons	Over 100 Pieces under 2 tons	Under 100 Pieces under 2 tons
Best Quality	+67½%	+97½%	+107½%
B.S.S. Best do.	+10% +67½%	+10% +97½%	+10% +107½%
Tested Quality	+37½% +67½%	+37½% +97½%	+37½% +107½%
B.S.S. Tested do.	+47½% +67½%	+47½% +97½%	+47½% +107½%

		£	s.	d.
3 in. Land Drain Pipes (in 12 in. lengths)	per 1,000	10	13	6
4 in. do.	"	14	2	0

STONE

Bath Stone—				
Monks Park	per ft. cube		7	10
St. Aldhelm Box Ground	"		8	10
Delivered in railway trucks at South Lambeth B.R. Western Region				
Doulting Stone Random Blocks. Delivered London area	"		8	7
Beer Stone. Delivered London area	"		8	0
Portland Stone—				
Brown Whitbed in random blocks, 20 ft. average delivered in railway trucks at Nine Elms, B.R. Southern Region	"		8	1½
Yorkshire Stone—Blue Robin Hood Quality.				
Delivered to site London in 6-ton lots.				
9 in. × 3 in. Rubbed, weathered, throated and stooled cills	per ft. cube	3	10	8
12 in. × 6 in. do. do.	"	2	10	6
12 in. × 3 in. Plain coping, twice throated	"	1	19	0
12 in. × 3 in. Weathered and twice throated coping	"	2	12	0
14 in. × 6 in. do. do.	"	2	7	0
4½ in. × 9 in. Plinth, rubbed on top and face	"	2	2	0
3 in. sawn two sides Slabs, random sizes	per ft. sup.		7	6

STONE—*continued*

		£ s. d.
Templates and Cover Stones, 3 in., 4 in. and 6 in. thick, edges coped for rendered brickwork ...	per ft. cube	1 5 9
Do. do. fair one edge for fair faced brickwork		1 10 6
Hard York—		
12 in. × 2 in. Square Steps, rubbed on top and edge	per ft. run	9 0
14 in. × 3 in. Round-nosed Steps, rubbed on top and front	per ft. cube	2 8 0
12 in. × 6 in. Plain Steps, rubbed top and front ...	„	2 2 0
2 in. Rubbed and Jointed Paving, given sizes ...	per ft. sup.	8 6
2 in. Sawn Paving, edges squared, in random sizes	per yd. sup	2 19 3

TILES AND PANTILES

	£ s. d.
Delivered London area by road in 6 tons or over per 1,000	
Machine-made Pantiles and French pattern Tiles from Lincolnshire district	29 8 0
Hand-made Pantiles Berkshire district	47 10 0
Hand-made Double Roman Bridgwater district	58 13 6
Hand-made 10½ × 6½ tiles Berkshire district	13 1 9
Machine-made 10½ × 6½ Staffordshire district	13 8 9
Hand-made Hip and Valley tiles per doz.	1 8 9
Machine-made Hip and Valley tiles do.	1 6 6
Concrete tiles 10½ × 6½	7 14 6
do. Interlocking (49S)	18 9 6

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES

	£ s. d.
First-quality Slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station. Per 1,000 actual	
24 × 12	124 6 4
22 × 12	103 3 8
22 × 11	93 4 6
20 × 12	88 0 0
20 × 10	82 1 0
18 × 10	59 6 6
18 × 9	52 0 0
16 × 10	48 16 0
16 × 8	38 0 0

NOTE.—Breakage in transit, purchasers' responsibility.

TIMBER

				£ s. d.
Softwood—				
Joinery quality	Ex. Wharf	per standard		£110 to £130
Carcassing quality	do.	„		£98 to £102
1 in. Tongued and Grooved Flooring	do.	„		£108 0 0
Hardwood—				
Mahogany—African S.E. ...	do.	per ft. cube		1 10 0
do. Honduras do. ...	do.	„		3 5 0
Oak European do. ...	do.	„		2 5 0
do. Japanese do. ...	do.	„		2 10 0
do. English Logs sawn ...	do.	„		1 15 0
Teak 8 in. average S.E. ...	do.	„		3 5 0
Walnut African Logs sawn ...	do.	„		1 5 0

DOORS (in Lots I-II)

Delivered London area.

		£ s. d.
1⅛ in. 4 Horizontal Panel Pattern 4 in. deal		
2 ft. 0 in. × 6 ft. 6 in.	each	1 12 0
2 ft. 3 in. × 6 ft. 6 in.	„	1 13 0
2 ft. 6 in. × 6 ft. 6 in.	„	1 14 0
2 ft. 9 in. × 6 ft. 6 in.	„	1 16 6
2 in. do. but top panel open. Pattern 4 × G in deal		
2 ft. 6 in. × 6 ft. 6 in.	„	2 9 0
2 ft. 9 in. × 6 ft. 6 in.	„	2 11 6
2 in. Panel, top panel open. Pattern 2 × G in deal		
2 ft. 6 in. × 6 ft. 6 in.	„	2 1 9
2 ft. 9 in. × 6 ft. 6 in.	„	2 3 6

SUNDRIES

		£ s. d.
Delivered London area		
1 in. Wood Wool Slabs, 6 ft. 0 in. × 2 ft. 0 in. in quantities of 1 ton (89 yds. to 1 ton)	per yd.	5 8
1½ in. do. (67 yds. to 1 ton)	„	7 4
2 in. do. (52 yds. to 1 ton)	„	8 11½
2½ in. do. (45 yds. to 1 ton)	„	10 3
3 in. do. (39 yds. to 1 ton)	„	11 5½
Quantities under 1 ton add 1d. per ½ in. of thickness.		
⅛ in. imported insulation Board, quantities over 5,000 sq. ft.	per 100 sq. ft.	2 2 6
¼ in. Hardboard do.	„	2 1 6
5/16 in. do. do.	„	3 2 6
½ in. Asbestos Flat Building Sheets	per yd. sup.	3 5
Roofing Felt, 1-ply	„	1 6
do. 2-ply	„	1 9
Best Scotch Glue, in slabs	per ½ cwt.	5 0 0
do. pearl	„	5 5 0
Croid Glue	28 lb.	2 6 0
Cut Nails 3 in. (1-ton lots)	per ton	58 5 0
do. 4 in. and up (1-ton lots)	„	54 15 0
Wire Nails, 3 in. (4-cwt. lots)	per cwt.	2 16 3
do. 4 in. and up (4-cwt. lots)	„	2 12 9

METALS

STEEL JOISTS, ETC.

			£ s. d.
Basis Joists—			
6 in. × 5 in., 8 in. × 5 in., 8 in. × 6 in., 10 in. × 6 in. 12 in. × 6 in. plain cut to lengths delivered London area	per ton		39 0 0
Extra for sizes			
3 in. × 1½ in. 4 in. × 1½ in.	„		3 10 0
3 in. × 3 in.	„		2 10 0
4 in. × 3 in., 10 in. × 4½ in.	„		1 10 0
5 in. × 2½ in., 5 in. × 3 in.	„		1 15 0
4½ in. × 1½ in.	„		3 5 0
5 in. × 4½ in. 7 in. × 3½ in. 13 in. × 5 in. ...	per ton		15 0
6 in. × 3 in. 24 in. × 7½ in.	„		2 0 0
6 in. × 4½ in. 7 in. × 4 in. 8 in. × 4 in. ...	„		1 5 0
9 in. × 4 in. 10 in. × 5 in.			1 0 0
12 in. × 5 in. 22 in. × 7 in.			
9 in. × 7 in. 10 in. × 8 in. 12 in. × 8 in.			
14 in. × 5½ in. 14 in. × 6 in. 14 in. × 8 in.			
15 in. × 5 in. 15 in. × 6 in. 16 in. × 6 in.	„		10 0
16 in. × 8 in. 18 in. × 6 in. 18 in. × 7 in.			
18 in. × 8 in. 20 in. × 6½ in. 20 in. × 7½ in.			
Steel angles average price	„		40 15 0
Steel tees average price	„		41 15 0
Fabricated work delivered London—			
R.S. Joists cut and fitted	„		55 10 0
Compound girders	„		61 0 0
Stanchions	„		66 10 0
Compound stanchions	„		70 5 0
In Roof Work—Trusses and Purlins	„		83 0 0
Average prices not for awkward work.			
Mild Steel Ferro-Concrete bars to BSS785 ex London			
Stock ⅜ in. diam., and upwards	„		40 6 0
½ in. diam.	per ton extra		4 7 0
5/8 in. do.	„		3 7 0
¾ in. do.	„		2 9 6
⅞ in. do.	„		1 12 0

MILD STEEL TUBES

Tubes to BSS1387 and Fittings. List prices and following discounts:

Galvanised Tube—	W.I. Fittings	Malleable Fittings
Class A NET		
Class B + 9½%	Light + 28½%	Malleable List—32½% + 40%
Class C + 25½%	Heavy + 36%	
Black—		
Class A − 21½%		
Class B − 11½%	Light + 15½%	Malleable List—32½%
Class C + 1½%	Heavy + 23½%	

C.I. HALF-ROUND GUTTERS

Delivered London per yd. in 6-ft. lengths

	Gutters	Nozzles	Stop Ends
3 in.	3/4½	3/-	/10
3½ in.	3/8	3/3	/10
4 in.	4/9	3/8	1/3
4½ in.	5/2½	4/1	1/6
5 in.	5/9½	4/5	1/10

C.I.O.G. GUTTERS

3 in.	4/4½	3/11	1/-
3½ in.	4/10½	3/11	1/3
4 in.	5/4½	4/1	1/6
4½ in.	5/9½	4/8	1/10
5 in.	6/4½	5/5	2/1

C.I. RAIN-WATER PIPES

Per yd. in 6-ft. lengths	Pipe	Bends	Branches
2 in.	7/2½	3/8	5/4
2½ in.	7/2½	4/1	7/1
3 in.	8/1½	5/2	7/8
3½ in.	9/3	6/1	9/3
4 in.	10/8	7/4	10/11

L.C.C. COATED SOIL PIPES

2 in.	8/2½	6/4	7/8
2½ in.	8/7½	7/-	9/7
3 in.	9/8	7/8	11/7
3½ in.	10/10	9/7	13/7
4 in.	12/4	10/8	15/8

Above prices for gutters, rain-water and soil pipes for under 5 cwt. lots only. Lots over 5 cwt. see List No. 3300 dated February 1, 1955, plus 2½% and tonnage allowance. 4-ton lots 5 per cent, 2-ton lots 2½ per cent.

L.C.C. COATED DRAIN PIPES

In 9-fts.

	cwt.	qr.	lb.	per yd.	Bends	Branches
4 in.	1	1	17	25/8	18/3	32/6
6 in.	2	0	1	38/1	48/6	77/9

ASBESTOS RAIN-WATER PIPES AND FITTINGS

All less 17½ per cent. discount.

	2 in.	2½ in.	3 in.	4 in.
Pipes 6-ft. lengths ... per yd.	3/9	4/-	4/10	6/5
Shoes ... ... each	2/5	2/8	3/2	4/3
Single Branches ... „	3/9	4/6	5/4	7/6
Bends square or obtuse „	2/8	2/11	3/9	5/4
Swan Necks 4½ in. proj. „	2/11	3/9	4/3	5/11
do. 6 in. do. „	3/2	3/9	4/10	6/5

ASBESTOS O.G. GUTTERS AND FITTINGS

	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths ... per yd.	3/7	3/11	4/8	5/7½
Drop ends ... ... each	2/10	3/4	3/10	4/7
Stop Ends ... ... „	/10	/11	1/-	1/2
Angles ... ... „	2/11	3/5	4/1	4/10
Nozzles ... ... „	2/10	3/4	3/10	4/7
Union Clips	1/5	1/8	2/1	2/5

ASBESTOS HALF-ROUND GUTTERS AND FITTINGS

	3 in.	4 in.	4½ in.	5 in.	6 in.
Gutters 6-ft. lengths ...per yd.	2/6	2/11½	3/0½	3/7	5/-
Drop ends ... ... each	2/1	2/5	2/8	2/11	4/3
Stop ends ... ... „	/9	/10	/11	1/-	1/2
Angles ... ... „	2/5	2/8	2/11	3/2	4/3
Nozzles ... ... „	2/1	2/5	2/8	2/11	4/3
Union Clips ... ... „	1/-	1/1	1/2	1/4	2/-

METALS—*continued*

	Per ton basis in London £ s. d.
Iron—Staffordshire Crown Merchant Quality	42 17 6
Mild Steel Bars	37 14 0
Mild Steel Hoops	39 1 0

	Ex Merchant's Stock per ton Two-ton lots £ s. d.
Soft Sheets C.R. and C.A.—	
20 gauge	49 6 0
24 gauge	51 16 0
26 gauge	54 16 0
Galvanised Corrugated sheets 6 ft. to 9 ft.—	
20 gauge	56 6 6
24 gauge	59 16 6
26 gauge	65 1 6
Galvanised Flat sheets C.R. and C.A.—	
20 gauge	57 16 6
24 gauge	61 6 6
26 gauge	66 11 6

Plumbers' Brass Work, Copper, Zinc, etc.

Delivered in London area.

M.O.H.

All per doz.	¼ in.	⅜ in.	1 in.	1¼ in.	1½ in.	2 in.
Screwdown bib cocks Crutch head for iron	87/-	128/8				
Toilet bib cocks for iron	109/-	158/5				
Screwdown stop cocks for iron	66/-	95/9	188/-	363/-	522/6	917/6
do. with two unions for lead	89/-	132/-	234/4	472/-	623/6	1389/6
Double nut boiler screws	18/8	26/5	47/6	48/6	67/-	93/6
Heavy Croydon ball valves	77/-	193/6	312/5	568/8	734/10	—
Plumbers' union brass lead to iron	19/6	23/6	38/6	52/10	70/6	165/-

	1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
Caps and screws	33/-	40/8	59/6	92/5	118/10	155/3
Brass sleeves			31/11	31/11	56/2	74/10	91/5

	1½ × 6 lb.	1½ × 6 lb.	2 × 7 lb.	3 × 7 lb.
Lead P. trap with brass cleaning screws	63/6	79/6	127/-	217/3
Lead S. trap do.	77/-	95/-	156/3	281/-

		s. d.
Solder		
Plumbers'	per lb.	3 0
Tinmen's	„	3 8
Blow pipe	„	3 9

Copper tubes BSS 659/1944 on the basic price of 37½d. per lb. plus gauge and manufacturing extras as follows. Minimum quantities, 3 cwt.

	Extra d.	Total per lb. d.
¼ in. × 19 gauge	12¾	50
⅜ in. × 19 „	11¼	48¾
1 in. × 18 „	9¾	46¾
1¼ in. × 18 „	9	46¼
1½ in. × 18 „	9	46¼
2 in. × 17 „	10¾	47¼

		£ s. d.
Rolled Copper sheets up to 48 in. wide, basic price plus gauge and manufacturing extras	per ton	347 15 0
Sheet Zinc 10 gauge (25 SWG) 5 cwt. lots upwards	per cwt.	8 6 3
do. 12 gauge (23 SWG) do.	„	8 4 6
do. 14 gauge (21 SWG) do.	„	8 3 6
Brass tubes basic price, plus gauge and manufacturing extras	per lb.	2 5½

LEAD SHEET AND PIPES

Basis selling price in minimum one-ton delivery to one address in London or Home Counties.

		£ s. d.
Lead Sheet, English, 3½ lb. substance and upwards	per ton	140 5 0
Lead Water Pipe in coils	„	141 10 0
Lead Soil Pipe 10 ft. or over 2 in. to 4 in. dia.	„	143 0 0
do. over 4 in. dia.	„	145 0 0
Lead Gas or Untinned Compo pipe	„	143 0 0
Extras over Basis for quantities under 1 ton		
5 cwt. and under 1 ton	per cwt.	2 0
3 cwt. do. 5 cwt.	„	4 0
1 cwt. do. 3 cwt.	„	6 0

Smaller quantities than 1 cwt. priced specially.

Supplying sheet lead and lead pipe to less than basis weights and cutting to sizes less than basis charged extra according to current trade schedule.

Allowance for Old Lead, collected £99 0s. 0d. per ton weighed at buyer's works.

PLASTER, etc.

			£ s. d.
Coarse Pink in 1-ton loads and over Delivered on Site	per ton		7 11 9
do. White do. do.	„		7 19 6
Sirapite Coarse do. do.	„		7 14 3
do. Fine do. do.	„		8 2 3
Blue Lias Lime in 6-ton loads	„		6 9 6
Hydrated Lime do.	„		5 12 6
Lump Lime do.	„		5 2 0
White Keen's or Parian Cement in 1-ton loads	„		10 12 0
Pink Keen's or Parian Cement in 1-ton loads	„		10 6 6
Granite Chips in 6-ton loads	„		2 6 9
Hair	per cwt.		4 17 6
Gypsum Plaster Lath or Base Board ⅜ in. thick 600 yds. and over in one delivery. Delivered site	per yd.		2 3
1,200 yds.	„		2 2½
Gypsum Plaster Wall Boards, 3 and 4 ft. wide, 6 to 12 ft., ⅜ in. thick, 600 yds. and over in one delivery. Delivered site	„		2 6
1,200 yds.	„		2 5½

PAINT AND DISTEMPER

Delivered London area.

		£ s. d.
Ceiling Distemper	per cwt.	1 7 6
Washable Distemper	„	5 5 0
Gloss Paint	per gal.	2 10 0
Snowcem cement paint (in 1 cwt. drums)	per cwt.	3 11 0

Lead Products and Oils.

Ground White Lead, 1 cwt. kegs	per cwt.	8 18 0
Genuine White Lead Paint, 1-19 gal. lots in 1 gal. tins	per gal.	3 2 0
Genuine Red Lead, Dry, 1 cwt. keg	per cwt.	6 19 3
Genuine Linseed Oil Putty, 1 cwt. keg	„	2 11 0
Size XD quality, 28 lb.	per tin	9 0
Raw Linseed Oil (5 gal.) drums extra	per gal.	12 0
Boiled Linseed Oil (5 gal.) do.	„	12 6

Sundries.

		s. d.
Turpentine substitute (5 gal.) drums extra	„	5 6½
do. do. (40 gal.) do. do.	„	4 8½
Solignum, Brown (5 gal. cans) Exterior	„	6 6
Creosote (40 gal. barrels)	„	2 0
Paste Powder (1 lb. packets)	per lb.	1 6
White Lining Paper	per piece	1 0

VARNISHES, etc.

Delivered London area

		£ s. d.
Oak Varnish, Outside or Inside	per gal.	1 12 6
Oak Pale Copal do.	„	1 18 0
Hard Drying Oak for Inside	„	2 0 0
Crystal Paper Varnish do.	„	2 0 0
Eggshell Flat Varnish do.	„	2 14 0
Finest Carriage Varnish	„	2 10 0
Front Door Varnish	„	2 0 0
Japan Gold Size	„	1 12 6
Black Japan	„	1 14 0
Brunswick Black	„	1 10 0
Berlin Black	„	1 5 0
Terebene	„	1 8 0
Knotting (1 gal. bottles free)	„	2 2 0
French and Brush Polish (do.)	„	1 18 0

GLASS

Delivered London area

	Per ft. super s. d.
18 oz. Sheet Glass Ordinary Glazing Quality. Cut Sizes	5½
24 oz. „ „ „ „ „ „	7½
26 oz. „ „ „ „ „ „	10
32 oz. „ „ „ „ „ „	1 1
⅛ in. Rolled Plate	9
⅜ in. and ½ in. Rough Cast	1 0
⅛ in. Figured Rolled and Cathedral, Standard patterns: White	9
do. Standard Tints	1 4½
do. Special Tints	2 9
¼ in. Pinstripe, Hammerstripe, Reeded, Reedlyte and Luminating	1 1
¼ in. Wired Cast	1 2
¼ in. Georgian Wired Cast	1 2½

Hollow Glass Blocks—	Each
P.B.2. 5¾ × 5¾ × 3⅞ in.	2 9
P.B.3 7¾ × 7¾ × 3⅞ in.	4 2
P.B.32 7¾ × 7¾ × 3⅞ in.	4 2
Radiused Corner Blocks to match up with—	
P.B.2	5 3
P.B. 3	6 9
P.B. 32	6 9

¼ in. Polished Plate Glass, G.G. Quality—	Per ft. super
In plates not exceeding 2 ft. sup.	3 7
„ „ „ 5 ft. sup.	4 5
„ „ „ 45 ft. sup.	5 1
„ „ „ 100 ft. sup.	5 6

¼ in. Polished Plate, extra sizes, *i.e.* plates exceeding 100 ft. sup. or 160 in. one way or 96 in. both ways. G.G. quality —Not exceeding 135 ft. sup. or 250 in. one way or 135 in. both ways

		s. d.
Not exceeding 180 ft. sup. or ditto		8 4
Not exceeding 200 ft. sup. or ditto		11 3
		16 0

Plates exceeding 200 ft. sup., prices on application.

Substances other than ¼ in. Polished Plate at Special Prices.

Quantity Tariff—Sheet and Sundry Glass.

The following prices apply to minimum quantities of one size and one pattern delivered by the manufacturer to one site at one time.

Description of Glass	Minimum quantity	Per ft. super s. d.
18 oz. sheet O.Q	3,000	4½
24 oz. „ „	2,000	6½
26 oz. „ „	2,000	7½
32 oz. „ „	2,000	10½
⅛ in. Rolled Plate	1,000	7½
⅛ in. Figured Rolled and Cathedral Standard Patterns, White	1,000	7½
⅛ in. Pinstripe, Hammerstripe, Reeded, Luminating and Spotlyte	1,000	10½
⅜ in. and ½ in. Rolled Plate or Rough Cast	2,000	10½
¼ in. Wired Cast, Hexagonal	2,000	11½
¼ in. Georgian Wired Cast	2,000	1 0½

The Builder

CURRENT RATES OF WAGES

AS FROM APRIL 18, 1955. **(Every endeavour is made to ensure accuracy but we cannot be responsible for errors.)**

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification.	A	A1	A2	A3
Craftsmen	4/–	3/11½	3/11	3/10½
Labourers	3/5½	3/5	3/4½	3/4

Town.	Grade.
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A2
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone R.D. (parts of)	A
Aylesbury	A2
Aylesham	A2
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A
Barnoldswick U.D.	A
Barnsley C.B.	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D.(exc. Willough-by-on-the-Wolds A1)	A
Basingstoke	A1
Bath	A
Batley M.B.	A
Baxterley	A1
Beaconsfield & District	A1
Beart	A
Beccles	A2
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A
Berrington	A1
Berwick Borough	A
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U.D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Bolton U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A1
Breconshire, County of	‡A2
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Broughton, Flint	A
Buckley	A
Bungay	A2
Burnham-on-Crouch	A2
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A1
Buxton	A
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A2
Carlisle	A
Carmarthenshire, Cnty of	‡A2
Caernarvonshire, Cnty. of	‡A2
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippen-ham Within and Harden-huish)	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A1
Crewe	A
Cromer	A1
Crook and Willington U.D.	A
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A2
Doncaster C.B.	A
Dorking	A
Dorset, County of (except-ing Poole, Swanage and Wimborne A1)	A2
Dover	A2
Dovercourt	A
Driffield U.D.	A1
Droitwich M.B.	A
Dudley C.B.	A
Dunstable	A
Durham City	A
Eastbourne	A
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A2
Epping	A
Exeter	A
Fakenham	A2
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough U.D.	A
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A
Gravesend	A
Great Yarmouth	A
Grimsby C.B. & R.D.(part)	A
Grimsby R.D. (remainder)	A2
Guildford District	A2
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A
Harpenden	A
Harrogate	A
Hartlepool	A
Harwich	A
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Hinckley U.D.	A
Hitchin	A
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A2
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A1
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Lancaster	A
Leamington M.B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A1
Letchworth	A
Lewes	A2
Lichfield M.B.	A
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A1
Lowestoft	A
Loxton	A2
Luton	A
Lyneham (Devon)	A2
Macclesfield	A
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A1
Malvern U.D.	A1
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough U.D.	A
Maryport	A
Matlock U.D.	A
Melksham	A2
Melton Mowbray U.D.	A1
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A
Milford Haven	A1
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A1
Newmarket	A1
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
" Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A2
Ramsgate	A2
Rayleigh	A
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A
Saxmundham	A2
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A
Sleaford U.D.	A2
Slough	A
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A1
Stratford-on-Avon M.B.	A
Sunderland District	A
Sunningdale	A1
Sutton Coldfield M.B.	A
Swaffham	A2
Swanage	A1
Swansea	A
Swindon	A
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A2
Thorpe Bay	A
Thurrock U.D.C. Area	A
" North of, to Billericay	A
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington U.D.	A
Wells (Norfolk)	A2
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A1
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A
Widnes	A
Wigan	A
Wigton	A2
Wilmslow	A
Wilts. County of	‡A2
Winchester	A1
Windermere	A2
Windsor and Eton	A
Wisbech	A2
Witham	A1
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A2
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A1
Wylam	A
Wymondham	A2
York	A

For Birkenhead, Liverpool and London the rates are:—Craftsmen, 4s. 1½d.; Labourers, 3s. 7d. In the case of London the rate beyond the 12-mile radius is:—Craftsmen, 4s. 1d.; Labourers, 3s. 6½d. †Plus 2d. per working day. ‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters and Joiners providing own tools when employed in establishments operating under the Supplementary Rules for Woodworking Factories and Shops, receive 2d. per day; when employed on other building industry work, 4d. per day.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 3s. 1½d. per hour. Women engaged on work other than craft processes, 2s. 9½d. per hour.

For Building Trade Wages in Scotland see page 898.

NEWS IN BRIEF

LIFTS IN FLATS SCHEMES

The LCC housing development schemes for which tenders will be invited during the current financial year will necessitate the installation of 150 passenger lifts in blocks of flats. Tenders for the lifts are to be invited from specialist firms. The estimated cost of these 150 lifts is £330,000.

FILM OF KUWAIT

Richard Costain, Ltd., recently showed at their Westminster Bridge-road offices a colour film, produced by their own film unit, of the power station and water distillation plant constructed by the firm for the Ruler, HH Sheikh Sir Abdulla Al Salim Al Subah, at Kuwait. These buildings make an impressive group, especially as seen in colour. The distillation plant will deliver two million gallons of fresh water daily, distilled from the sea, while the power station is of 30,000kW capacity. Both installations are fired by piped natural gas from the oil fields, and the contractors are justifiably proud of the fact that the first turbine of the power station was actually on commercial load within 18 months of commencement of excavations. Collaboration between the consulting engineers (Ewbank and Partners and Sir William Halcrow and Partners), the architects (Farmer and Dark), the water distribution engineers (John Taylor and Sons) and the contractors was complete. The film is non-technical in that it shows the building completed and not in construction, but it remains an interesting record of a remarkable British achievement.

PARTY WALLS

Tickets for the meeting of the Institute of Clerks of Works to be held at the RIBA on June 2, at which Mr. E. R. Fisher, DCM, MIStructE, will speak on "Modern Party Wall Problems," can be obtained from Mr. R. Harmer, 14, Meadow Walk, Walton-on-the-Hill, Tadworth, Surrey.

APPOINTMENT

Mr. S. Dale, senior building inspector to the Borough of Crewe, has been appointed building inspector to the Borough of Kidderminster.

1955 FIDOR CONFERENCE

Delegates representing subscribers in eight countries will be present at the second annual conference of the Fibre Building Board Development Organisation, Ltd., 47, Princes Gate, SW7, to be held at the Continental Hotel, Oslo, on June 7 and 8.

INVITATION TO MODEL FARM

New farm buildings on the east side of the main Leeds-Harrogate-road near the fourth mile post from Harrogate erected by Mr. Cecil Rhodes in the past three years, will be open to inspection on June 3, at 7.30 p.m., states the Ministry of Agriculture. Further details from the Committee Land Agent, WRYAEC, Block 7, Government Buildings, St. George's-road, Harrogate.

TIMBER COURSE

The next one-week course on timber to be held at Southfield House, Oxford, by Dr. H. E. Desch, FRICS, timber consultant, 11, Haymarket, SW1, will take place from July 11 to 16.

TDA DISPLAYS

New designs and methods of construction exemplifying timber's contribution to rural housing and farm improvement will be on view at the Bath and West Show, due to open at Launceston on June 1. Planned by the Timber Development Association, 21, College Hill, EC4, as part of a national campaign, exhibits on the same theme will also be staged at the Royal Show at Nottingham, the Royal Highland Show at Edinburgh, the Great Yorkshire Show at Harrogate and the Royal Lancashire Show at Blackpool.

NEW SECRETARY

Mr. E. T. Endersby, of 3 Dundee-road, South Norwood, London, SE25, has been appointed secretary of the National Federation of Clerks of Works and Builders' Foremen in succession to Mr. F. H. Gregory, who has resigned. The Federation now represents 15 associations.

EXAMINATION RESULTS

The medals, prize and pass lists for the 1955 professional examinations of the Chartered Auctioneers' and Estate Agents' Institute, 29, Lincoln's Inn Fields, WC2, have now been published.

The Daniel Watney Medal and Prize has been awarded to Mr. D. D. James, of Streetly, Staffs.

CIA TRAINING OFFICER

The Council of Ironfoundry Associations has appointed Mr. J. J. Collett as the council's training officer. Through the recruitment, training and education committee, Mr. Collett will advise the council on all matters relating to personnel training.

RESIGNATION OF ROSPA PRESIDENT

Sir Charles Bartlett has tendered his resignation from the post of president of the Royal Society for the Prevention of Accidents. His action is due to continued indisposition and was taken on the advice of his doctors.

FIRE AND SCHOOL DESIGN

A second edition of Building Bulletin No. 7, "Fire and the Design of Schools" (HMSO, price 2s. 6d.), was published on May 2. Two important alterations have been made in the revised text. Recommendations about the use of timber for two-storey buildings are included, and Table VII, dealing with the use of combustible lining materials to walls, partitions and ceilings, has been revised.

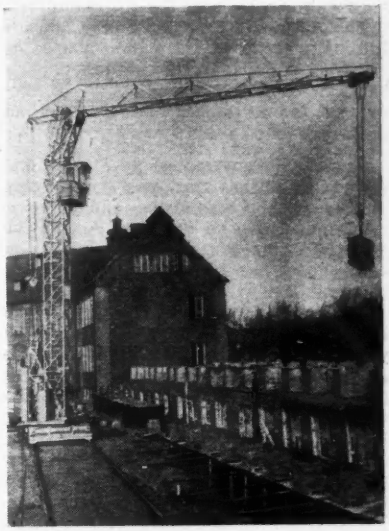
LMBA AND ARCHITECTS' MEETING

The West Essex Chapter of Architects and members of the North-Eastern Area of the London Master Builders' Association held their annual joint meeting at the Valentine Hotel, Ilford, on May 10, when a large number of architect and builder members were present. Mr. R. C. Harrison, chairman of the Chapter, presided, and was supported by Mr. T. A. Clark, chairman of the North-Eastern Area, LMBA. The members of both organisations were shown films of constructional work carried out in other countries, and during the evening, the annual award for craftsmanship made by the Chapter, for joinery work installed in the Ursuline Convent, Cranbrook-road, Ilford, was presented by Mr. Clark to the winner, Mr. Seager, of J. and R. Rooff, Ltd.

TRADE NEWS

SWEDISH BUILDING CRANE

A novel crane for building purposes, the first all-Swedish unit of its kind, has recently been launched on the Swedish market by AB Malcus Holmquist, of Halmstad, Sweden. With a hoisting speed of 131 ft. per minute for loads up to 1.1 tons at a radius of 56 ft. and an elevation of 55 ft., it is claimed to be



one of the speediest-working cranes ever to be built. Both hoisting and revolving machinery have elastic coupling with brake disc. The lower bars of the crane beam serve as rails for the hoisting carriage, which makes it possible to pick up and dump the load at any point within the crane's working area. The operator's cabin is electrically heated. This 30-ton crane, mountable on the working site in one day, is shortly to come into series production. It has undergone a series of exhaustive tests.

MANUFACTURE TO CEASE

As from June 1, Monsanto Chemicals, Ltd., 8, Waterloo-place, SW1, are to cease to manufacture and supply Permasan No. 1 and Permasan No. 2 pentachlorophenol formulations and will confine their activities in this field to the production of pentachlorophenol.

GYPSUM PLASTERS

All grades of plaster marketed under the brand names of "Thistle" and "Pharaoh" were subject to a price increase of 5s. per ton, on and after May 2.

DEMONSTRATION AT PRESTON

A special demonstration of some 40 different items of equipment suitable for use with the Ferguson mobile power unit was held at Preston on May 4 and 5 by Hoggarths (Tractors), Ltd., of Preston, in association with the Massey-Harris-Ferguson organisation of Coventry. Among the equipment demonstrated were a road gritter produced by Atkinson's Agricultural Appliances, Ltd., of Clitheroe.

CHANGE OF ADDRESS

As from June 1, the address of Secomastic, Ltd., will be Western-road, Bracknell, Berks. (Tel.: Bracknell 910/4.)

OVERSEAS BUILDING

[*From Our Own Correspondents*]

Australia.—An inner harbour project is to be commenced soon at Port Kembla on the southern coast of New South Wales, Australia. Plans for this large project are now being prepared. Port Kembla, which is the steel producing locality of New South Wales, is being expanded to keep pace with expansion of the steel industry.

The Australian Iron and Steel Company Ltd., is to spend several million pounds on extension projects. To cope with these plans 8,000 ft. of wharf frontage is to be constructed, the development being carried out in three stages.

Brazil.—The governor of the State of Rio Grande de Sul has sanctioned the spending of £5m. for the construction and improvements of airports in the state. Among the airports is the Porto Alegre airport, on which about two-thirds of the money is to be spent.

The Rio/Niteroi Tunnel project, which has been under consideration for many years, has reached a further stage in that at the beginning of the month a call for tenders was issued for plans for its construction. The Departamento Nacional de Estradas de Rodagam is to place large contracts for asphalt for the construction of the Rio de Janeiro/Belo Horizonte highway. The contracts are worth nearly £¼m.

The Office of the Comptroller of Currency and Credit has authorised the National Bank of Economic Development to obtain foreign financing of about £2m. for the construction of a chain of silos and warehouses in the State of Rio Grande de Sul.... Great interest has been aroused in Brazil by the recent discovery of oil in the Amazon area. The site has now been completely surveyed. A number of firms are interested in building here and a small township will probably spring up over the next two to three years.

* *Gold Coast.*—Two companies have considered the possibility of establishing a factory in the Gold Coast for the local manufacture of oxygen and acetylene. One of these companies comes from the Continent, whilst the other has been locally formed under the title of Gold Coast Air Products. Its founders are three Italian nationals who hope to start production within the next two or three months. The large contractors who are now engaged on the Gold Coast development schemes have complained of a shortage in the supply of these two gases from the UK.

The Finance Minister has stated that the following schemes are under investigation: Production of safety matches from local wood; wire nail manufacture; glazed pipes for sewage from local clay; quarrying; manufacture of soap; manufacture of paper and compressed boxes; installation of a public refrigeration service; the installation of a second brewery to supplement the existing one; the installation of a mineral water plant in Kumasi; a Coca-cola factory, planned to be in operation by June, 1955; extension of rail and road communications and the provision of secondary and feeder roads.

* From the Board of Trade Special Register Information Service.

Malaya.—The new airport which is being built at Paya Lebar, Singapore, is to have a £1m. terminal building. The scheme is being carried out under the direction of Mr. K. A. Brundle, Assistant Director of Public Works. A team headed by Mr. L. W. Carpenter, Senior Architect of the Public Works Department, is working on drawings and plans. Work is expected to start on the building next year, and it will replace (probably at the end of 1957) the temporary terminal building which is now nearing completion.

Mr. J. A. Chippindale, Operations Manager of the Shell Co. of Singapore, Ltd., left for Britain on May 7 on retirement leave. He expects to return to the colony in October as an associated architect of Messrs. Swan and Maclaren, in connection with the building of the new 15-storey Shell skyscraper on Collyer Quay, plans for which have been sent to the City Architect.

About 100 members of the Institute of Architects of Malaya, recently attended a party in honour of a visiting architect, Sir Howard Robertson, from London. With Mr. S. E. T. Cusdin, he had arrived in Malaya for talks with the University of Malaya authorities on plans for expansion. Work on this big project is expected to start later this year. Mr. Cusdin will be returning to the colony in September to make final arrangements.

The Great Eastern Life Assurance Co., Ltd., has started building 88 flats at a cost of about £200,000 in High-road, Singapore, for renting out to the public. The architects are Messrs. Wong and Karmakar, and the contractors are the Nanyang Structural Co.

A new Yeung Cheng School is to be built in Club-street, Singapore, at a cost of £60,000. The architect is Mr. Wong Foo Nam.... The Malayan Chinese Association is building a 12-storey block costing about £¼m. at the junction of Orchard and Cuscaden-roads, Singapore. The architect, Mr. Wong Foo Nam, has designed shops on the ground floor, offices, three storeys of 42 flats, six storeys of 168 rooms for an hotel, and a restaurant, dance hall and roof garden at the top.

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On the first phase of private building development in Orchard-road, Singapore, the Nghee Ann Kongsi (A kongsi is a Chinese "company" or "partnership") has begun construction of a five-storey block of shops and flats. The block, costing £125,000, is the smallest of three which the architects, Ng Keng Siang and Co., have designed.... Mr. E. H. Ong, a graduate of the Massachusetts Institute of Technology, who is with the architectural firm of Mr. Wong Foo Nam, has designed a modern Seventh-Day Adventist Church to be built in Singapore at a cost of £30,000.

**Nigeria.*—A White Paper outlining a five year development programme was placed before the Northern Regional House of Assembly at its budget session. It is expected that the cost of the scheme would be £79,130,000. Emphasis is to be placed on the development of educational facilities, public works and utilities, medical and health requirements and agriculture.... £800,000 is to be spent during the coming financial year by the Federal Government on maintenance of trunk "A" roads, of which there are some 5,500 miles in the country. The Northern Regional Government is planning a feeder road system strong enough to take heavy diesel lorries. £50,000 has been set aside by the Southern Cameroons Government for road improvements within its territory, and a grant of £43,000 has been provided by the Western Regional Government also for the building of feeder roads. £1m. is to be spent by the Federal Government during the year ending March 31, 1956, for the provision of accommodation for low-income group workers in the Federal Territory of Lagos. Work is expected to commence on the scheme without delay.... A cigarette factory is to be established at Port Harcourt.... A well-known British firm is to establish a processing factory in connection with their concession for a large new rubber plantation near Calabar.... The Government in the Northern Region is negotiating for the establishment of a large-scale spinning and weaving factory at Kaduna at a cost of £1m., and it is also considering setting up a sack factory and a corn mill.

Portuguese East Africa.—A number of bridges are to be built in Portuguese East Africa. Nearly £120,000 is to be spent on two bridges to span the Revue River on the Bandula/Manica road and the Messica River on the same road. The building of eight new bridges at a total of £28,750 has been authorised on the Mucubela/Bajone road between Murrumpula and Alto Ligoaha. A sum of £166,137 has been authorised for the asphalting of main roads.

A number of well-known firms have received permission to build factories. The Companhia da Jutas de Mocambique is to build a plant for the manufacture of jute sacks and matting; Sociedade Agricola de Incomati is to build a sugar refinery at Xinavane; Empress Metalurgica de Mocambique Limitada is to build a factory for the manufacture of nails and wire mosquito netting; Lusolite de Mocambique is to set up a factory for the manufacture of asbestos cement goods; Companhia de Cimentos de Mocambique is behind plans for the building of a factory for the manufacture of tiles, and other ceramics at Dondo; Fabricas de Cerveja Reunidas

Limitada is to construct a brewery at Beira.

A new call for tenders for the civil engineering works of the Incomati-Movene hydro-electric scheme has been published in Lisbon. Three separate contracts are to be awarded worth £1,300,000, £1,360,000, and £1m. respectively.

South Africa.—Plans for the establishment of about 100 factories on the fringes of native reserves in South Africa at a capital cost of some £200m. have been drawn up by the industrial adviser to the National Resources Development Council, Dr. F. W. Quass. On the assumption that these factories will employ 30,000 Bantu and 6,000 European workers, Dr. Quass estimates that the money needed for the scheme will be made up of: capital investment, including housing, £120m.; railways and roads, £30m.; water conservation £20m.; other works, £30m. The areas where factories will be built are Ciskei, the Transkei, Zululand, the Eastern, Northern and Western Transvaal, and the Northern Cape. It is estimated that it will take up to 40 years to build these 100 factories. A number of schools and hospitals are included in the plans.

Spain.—The Bilbao firm of Ferroland SA in Spain has been authorised to construct a cement factory in Sagunto, Valencia, for the annual production of 40,000 tons of metallurgical and 20,000 tons of special cement.

The Altos Hornos steelworks at Bilbao have applied for permission to install a slabbing mill, a blooming mill and a Siemens furnace for the second stage of their development plan.

Plans are stated to be under way for the construction of an airport at San Sebastian, which will considerably facilitate air travel to the north of Spain.

Two power stations are to be constructed in the Spanish Pyrenees for the supply of electricity to France as well as Spain. Both countries are known to be interested in the scheme, and discussions at high level are being held.

NIGERIAN OIL DISCOVERY

Oil and gas has been detected at a well recently drilled at Ekim, Calabar Province, in South-Eastern Nigeria. This well, one of 11 drilled by the Shell D'Arcy Petroleum Development Co. of Nigeria, Ltd., since 1951, shows larger indications than previously encountered in that region and gives grounds for reasonable optimism.

The quantity of oil so far discovered is not economically sufficient for production purposes, and the company will now carry out further tests at other depths of this well. The programme also envisages the drilling of additional wells in the area of this latest discovery. More than £9m. had been invested in Nigeria by Shell D'Arcy in their search for oil up to the end of 1954.

CANADIAN WELDING CODE

The British Standards Institution has published a booklet entitled "Information on the Canadian Welding Qualification Code." This sets out in detail both the procedure adopted in Canada for certification of welded fabrications and the arrangements now agreed for carrying out this work in the United Kingdom. Copies of this booklet can be obtained on request from the BSI/CSA Approvals Agency, British Standards Institution, British Standards House, 2, Park-street, W1.

LIGHTWEIGHT CONCRETE

An illustrated paper dealing with the manufacture, properties and uses of lightweight concrete, by W. H. Taylor, MCE, AMICE, AMIE, Aust, which was presented to the Australian and New Zealand Association for the Advancement of Science at the Canberra conference in January, 1954, has been published by the Australian Commonwealth Scientific and Industrial Research Organisation. Copies may be obtained from The Chief, Division of Building Research, Commonwealth Scientific and Industrial Research Organisation, Graham-road, Highett, S21, Victoria, Australia.

UGANDA NATIVE HOUSING

The 1954 annual report of the African Housing Department, Uganda Protectorate, has recently been published. The main responsibility of the department last year was the development of housing estates at Kampala, Jinja, Entebbe, Mbale and Tororo. The department has also been responsible for experimenting with and developing new techniques, designs and materials suited to African housing in local circumstances and for advising local housing authorities, commercial firms and private individuals on building. Copies may be obtained (price 1s. 6d.) from Crown Agents for Overseas Governments and Administrations, 4, Millbank, SW1.

AUSTRALIAN MUNITIONS FACTORY

The Australian Government is to build an extensive munitions factory at St. Mary's, on the outskirts of Sydney, at a cost of £A23m. This has been announced by the Prime Minister, MR. MENZIES, after a meeting of the Federal Cabinet's Defence Preparations Committee. The new plant will be capable of manufacturing a wide range of munitions needed by the three services.

The new factory must be completed by the end of 1957, and about 4,000 workers will be employed there. A new type of contract will be drawn up to ensure the completion of the project by the due date.

BUILDING MATERIALS

*Mr. Fairn, 41 Argyle-street, Halifax, Canada, would like to receive a supply of catalogues, etc., from United Kingdom manufacturers of building materials and the like as they are required in connection with his business as an architect.

Apparently Mr. Fairn is receiving large numbers of catalogues from American and German manufacturers of building materials and he would like to receive similar issues from UK manufacturers. They are required in connection of drawing up plans for houses and offices of which there are large numbers going up in Halifax and Nova Scotia at present. If such catalogues and trade literature could be supplied in duplicate it would be appreciated as Mr. Fairn has an office in Wolfville, Nova Scotia, in addition to the one in Halifax. Telephone inquiries to Chancery 4411, Ext. 776, quoting ref.: ESB/9925/55.

FLOOR TILES INQUIRY

*Messrs. Pearman Watlington and Co., Front-street, Hamilton, Bermuda, would like to represent, in Bermuda, United Kingdom manufacturers of glazed or semi-glazed floor tiles in the following shapes, which are the most popular in Bermuda: octagons, hexagons and small squares.

Manufacturers interested in this agency inquiry should send full details of their offers direct to Messrs. Pearman Watlington and Co. Telephone inquiries to Chancery 4411, Ext. 776, quoting ref.: ESB/10019/55.

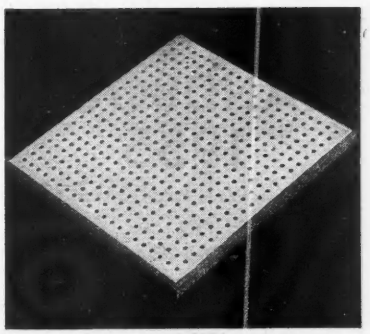
PLYWOOD INQUIRY

*The Atlanta Oak Flooring Company, PO Box 942, Atlanta, Georgia, USA, would like to contact United Kingdom manufacturers of plywood. (No particular specifications have been given by the Atlanta company as they would be glad to receive various types of offerings.)

Manufacturers interested in this inquiry should write by air mail direct to Mr. Harry D. Florence, executive vice-president of the US firm, quoting cif prices in US currency. Telephone inquiries to Chancery 4411, Ext. 776, quoting ref.: ESB/5144/53.

NAVY'S PREFAB ORDER

The Admiralty is to "export" prefabricated buildings to Ceylon. They have placed a £56,000 order with Maycrete, Ltd. (Parliament Mansions, Abbey Orchard-street, London, SW1) for the erection of 30 Shipston "packaged" bungalows in Ceylon. The order is part of a development scheme for Ceylon's naval base at Trincomalee, and is believed to be the first occasion on which the Admiralty has exported complete houses. Delivery of the complete factory-built parts of the bungalows, which have been designed to Admiralty specifications, will be made in June. The 30 houses will then be shipped, possibly by naval vessel, direct to Trincomalee where, with Ceylon labour, erection will start immediately.



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The SCOTTISH BUILDER

East Lothian Development Plan

THE Secretary of State for Scotland has now approved, subject to modifications, the Development Plan for the County of East Lothian.

Objections were lodged with the Secretary of State to some of the proposals of this development plan, notably those which related to the widening of the Hardgate and Market-street in Haddington. Much of the property to be affected by these widening proposals was of architectural merit. The proposals included the clearing of a site behind Market-street for a bus station. There was also objection to a proposal for the formation of a relief road and bus station at Tranent.

Following a public inquiry held by Mr. H. A. Shewan, QC, the Secretary of State has approved the proposals for the widening of Hardgate, but not those for the widening of Market-street with the exception of the portion situated to the east of Brown-street, nor has he approved the provision of a bus station. This decision will save from demolition the most important part of the architectural setting of Market-street.

In the case of the Tranent relief road, while the Secretary of State agreed in principle that a relief road was desirable, he was not satisfied with the proposed layout at the junctions with the trunk road. He has, therefore, removed the relief road and the bus station from the development plan, but it will be open to the County Council to bring forward amended proposals in their next plan.

Glasgow's Overspill

THE EXPANSION of existing communities in the vicinity of Glasgow to absorb part of the city's overspill was suggested on May 19 as the quickest method of dealing with the situation. Places named as likely to be expanded were Tannochside, Kirkintilloch and Holytown in Lanarkshire, and Kilmarnock in Ayrshire.

A meeting to discuss the question was held in the City Chambers, Glasgow. Lord Strathclyde, Minister of State, presided. In attendance were representatives of Glasgow Corporation and the Clyde Valley Planning Advisory Committee. It was stated that the new town proposed at Cumbernauld could not deal with the whole of the overspill, and that the Clyde Valley Committee would pursue inquiries in the direction of expanding existing communities.

Insurance Building, Edinburgh

PLANS originally laid in 1939 for the erection of the office block at the junction of George-street and Frederick-street, Edinburgh, for the Sun Insurance Office, are now being pushed ahead. Work began in October last, and substantial progress has been made with the sub-basement and basement floors; erection of the reinforced concrete framework should be completed by the autumn. External cladding will be in Blaxter stone. In contrast with this cream-coloured stone, the architect, Mr. T. Waller Marwick, FRIBA, FRIAS, has used black granite and bronze. Messrs. Kinnear and Gordon, Edinburgh, are the consulting engineers. Contractors for the first stage are Fram Reinforced Concrete (Scotland), Ltd., of Gordon-street, Glasgow; while Messrs. Ian Hunter and Partners, of Edinburgh, are heating and lighting consultants.

New University Building

ADAM HOUSE, the first new building to be erected by the University of Edinburgh for almost 20 years, was formally opened on May 19 by Sir Edward Appleton, Principal and Vice-Chancellor of the University.

Situated in Chambers-street, near the University Old College, the new four-storey buildings will be used for examinations and general purposes. It cost £180,000 to build and was designed by Mr. W. H. Kininmonth, FRIBA.

Architecture Awards

THE Royal Incorporation of Architecture in Scotland have announced the following awards in their annual competitions:—Rowand Anderson Studentship (£125 and silver medal)—Eileen M. Baker, Glasgow School of Architecture; 2, E. Brodie, Aberdeen School of Architecture; honourable mention, J. H. Fisher, Glasgow School of Architecture; I. H. Imlach and J. Davidson, Aberdeen School of Architecture.

New WD Depot at Ayr

THE WAR DEPARTMENT has put forward a proposal to acquire Castlehill Estate, on the outskirts of Ayr, as a site for a new depôt to replace the Churchill Barracks. If the development proceeds the Department will be prepared to relinquish the existing barracks near the harbour.

Ayr Town Council discussed the matter on May 9 and decided that it could not take a decision until it had considered the proposals more fully, and remitted the matter back to the Town Planning Committee.

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SCOTTISH BUILDING TRADE WAGES

FOLLOWING are rates of wages authorised by the Scottish National Joint Council as from April 18, 1955. They apply to the whole of Scotland, including the islands of Orkney, Shetland, etc.

Grade A: Craftsmen, 4s.; Labourers, 3s. 5½d.

For apprentices, the rates are:

Year.	Percentage of Craftsman's rate.	For week of 44 hours.
		s. d.
1st	25	44 0
2nd	33½	58 8
3rd	50	88 0
4th	66⅔	117 4
5th	75	132 0

For female labour, the rates are:

	s.	d.
Operatives on craft operations (at end of probationary period)	3	5½
Operatives on labouring operations (at end of probationary period)	3	2

NEW BUILDINGS

Argyllshire.—Plans are to be prepared for new Dunoon Pavilion at Castle Gardens. Architects, George Boswell, Mitchell & Johnston (F&A), 256, West George-st., Blythswood-sq., Glasgow.

Edinburgh.—Edinburgh Corporation has been granted permission at the Dean of Guild Court to erect 64 four-apartment houses in 14 blocks at Oxgangs Bank, at a cost of £102,000. The Court also granted warrant to the corporation to erect 26 two-apartment houses for old people at Loaning-rd.

Glasgow.—Plans have been approved for residence, garage and other offices at Quadrand-cres./Langside-rd., Newlands. Architect, Robert M. Paterson (F), 120, West Regent-st., Glasgow.

Glasgow.—Plans have been approved for new Maryhill church and presbytery for the Archdiocese of Glasgow at 104, Maryhill-rd. Architect, Thomas S. Cordiner (A), Blythswood-chbrs., West George-st., Glasgow.

Glasgow.—Plans have been approved for Protestant primary school at Site 2 at the Castlemilk Development district. Architect, Baron Bercott (F), 118, Blythswood-st., Glasgow.

Glasgow.—Plans have been approved for alterations and additions at 350-352, Argyll-st., Anderston. Architects, Whyte & Nicol (F), 31, North Frederick-st., George-sq., Glasgow.

Glasgow.—Plans have been approved for Robert Smith & Co. (Dennistoun), Ltd., 250, Alexandria-pde., for workshops at Pinkston-rd., Keppochhill. Architect, J. Smith, 260, Alexandria-pde., Glasgow.

Glasgow.—Plans have been prepared by their own architects for new workshops at 61 to 71, Kennedy-st. and 9 to 21, Hartfield-st., Townhead, for the West of Scotland Tyre and Rubber Co., Ltd., 7, Ward-st., Parliamentary-rd., Dennistoun, Glasgow.

Greenock.—Plans have been approved for John Mackenzie & Son, Ltd., William-st., for alterations and additions, etc., at Mackenzie-st., Carsdyke. Architect, John Bolton (A), Swan-bldgs., Hamilton-st., Vennell-corner, Greenock.

Greenock.—Plans have been prepared for Hugh Frazer & Co., Ltd., warehousemen, Glasgow, for alterations and extensions at Messrs. Prentice's, 42-44, Hamilton-st., and two-storey building with 55-ft. frontage at High-st. Architect, Donald Cameron (F), Buchanan-st., Glasgow.

Lanarkshire.—Plans are to be prepared for scheme of development at the west side of The Forth & Clyde Canal, north of Great Western-rd., consisting of 7½ acres for the erection of new workshops, etc. Chartered Surveyors. B. M. Doig, Crone & Smith, 114, Wellington-st., Glasgow.

Stranraer's Need for New Industry

CONCERN at rising unemployment in Stranraer was expressed at the town council meeting on May 9 when it was unanimously agreed to approach the Scottish Council (Development and Industry) regarding the need for some additional industry.

MR. W. HASTIE, a former convener of the council's new industries committee, said unemployment was rising in the town and another approach might be made to the Secretary of State. Their last approach had been made when finances were restricted, and there might be better prospects now.

The Builder FUTURE CONSTRUCTION

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JUNE 3.

*†**Bristol City C.**—Primary school, Heggard-close, Withywood. City A. Dep. £2 2s. Tenders by July 6.

*†**Southampton CBC.**—Sub depot, Chamberlayne-rd., Eastleigh. Boro' A. Dep. £1. Tenders by June 29.

JUNE 6.

*†**Enfield UDC.**—12 garages, Hoe Lane estate. E&S, 7, Little Park-gdns. Dep. £2 2s.

*†**Frinton and Walton UDC.**—Conveniences, Greensward. N. G. Harland, architect, "Easthope," Old-rd. Dep. £2 2s.

*†**Newport (Mon.) CBC.**—Assembly hall. TC.

JUNE 7.

*†**Epping UDC.**—28 houses and 12 bungalows, Coronation Hill estate. S. Dep. £2 2s.

*†**Northants CC.**—Buildings at four sites and police houses on various sites, and other building works. County A, Northampton.

JUNE 8.

*†**Coventry Corpn.**—Nursery school, Sadler-rd., Whitmore Park. City A., Bull-yard. Dep. £2 2s. Tenders by July 13.

*†**Leeds Regional Hosp. Board.**—Modifications to wards, Ackton General Hospital, Featherstone. Architect to Board, Park-parade, Harrogate. Dep. £2 2s. Tenders by June 29.

JUNE 10.

*†**Wakefield City C.**—104 flats. City E.

JUNE 11.

*†**Malvern UDC.**—Six shops and 4 flats, Pickersleigh-rd. C. C. Judson, S & Water E. Dep. £2 2s.

*†**Nuneaton BC.**—68 flats and maisonettes, Meadow-st. BS.

JUNE 15.

*†**Sutton and Cheam BC.**—11 houses, Sutton Common-rd. BE&S. Dep. £3 3s.

*†**Wilts CC.**—Infants' school, Penhill, Swindon. P. A. Selbourne Stringer, Clerk, Trowbridge.

JUNE 17.

*†**Clacton UDC.**—Four public shelters, East Greensward. E&S. Dep. £1 1s.

*†**Walthamstow BC.**—Conversion 8 houses, Carisbrooke-rd., into 31 flats. Boro' A, E&S. Dep. £2 2s.

JUNE 18.

*†**Hornchurch UDC.**—28 garages. S. Dep. £2 2s.

*†**Saffron Walden RDC.**—28 houses, Framsbury-la., Newport. C.

JUNE 24.

*†**Yeovil BC.**—12 flats and site works, Sunningdale housing estate. Petter Warren & Roydon Cooper (FF), The Old Oxford Inn, West Hendford, Yeovil. Dep. £2 2s.

JULY 4.

*†**Chingford BC.**—36 flats, Hatch-la. site. BE. Dep. £2 2s.

NO DATE.

*†**Leicester Catholic Council.**—Secondary school, Gwendolen-rd. Bryan & Harding, architects, 8, New-st.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JUNE 1.

*†**Hampstead BC.**—Chain link fencing, Westcroft estate, NW12. TC.

JUNE 3.

*†**Bristol City C.**—Heating, etc., Withywood "C" primary school. City A.

*†**Northampton EC.**—Renewing school floors at six schools. Chief Ed. Officer. Dep. £2 2s.

JUNE 4.

*†**Essex CC.**—Renewal of flooring, South-East Essex Tech. Coll., Longbridge-rd., Dagenham. County A.

JUNE 6.

*†**Durham CC.**—Building improvements, etc., to four buildings. County A, Durham.

JUNE 7.

*†**Dunstable BC.**—Exterior painting, etc., to 222 houses, Beecroft and Brewers Hill estates. Housing Estates Manager. Dep. £1 1s.

JUNE 13.

*†**Reading CBC.**—External painting four schools. Boro' A. Dep. £2 2s.

JUNE 15.

*†**Swansea CBC.**—Heating, etc., Mynyddbach county primary school, Tirdeunaw. Boro' A. Dep. £2.

JUNE 18.

Bexley BC.—Supply and erection of fencing. Parks Superintendent.

*†**Stafford.**—Renewal and installation of sanitary fittings and hot and cold water basins, St. George's Hospital. Secretary.

JUNE 20.

*†**Barrow-in-Furness Hosp. Management Committee.**—Re-roofing at Roose Hospital. Group Eng., Roose Hospital, Barrow-in-Furness.

*†**Halifax CBC.**—Reinforced concrete flooring, Skircoat bus garage. BE. Dep. £2.

JUNE 25.

*†**Essex CC.**—Repainting 30 small bridges. CS, Chelmsford.

JUNE 28.

*†**Ilford BC.**—Modernisation of 110 houses, Kingsley estate. BE. Dep. £2 2s.

ROADS, SEWERAGE AND WATER WORKS

JUNE 4.

*†**Bromley BC.**—Concrete paths, Southborough, Turpington and Hayes estates. Property Manager. Dep. £2.

JUNE 15.

Aspull UDC.—Relief sewers, Hilton estate. E&S. Dep. £3 3s.

Birmingham City C.—Sewerage at Kennington-rd. and Selly Park-rd. City E&S. Dep. £2 2s.

JUNE 17.

Lee Conservancy Catchment Board.—Contract No. 11, flood alleviation scheme. N. Medrington, AMICE, E to Board, "The Grange," Crossbrook-st., Cheshunt. Dep. £5.

JUNE 20.

Heanor UDC.—Sewerage and sewage disposal scheme, 1955. Elliott and Brown, consulting engrs., Stanley House, Pelham-rd., Nottingham. Dep. £5 5s.

JUNE 22.

Devizes RDC.—Easterton Market, Lavington and West Lavington sewerage and sewage disposal, stage I. Harvey McGill & Hayes, consulting engineers, 38, Market Place, Chippenham, Wilts.

Lowestoft BC.—Roads and sewers off Homefield-ave. BE. Dep. £2 2s.

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JUNE 25.

Bognor Regis UDC.—R.c. covered service reservoir of 2½m. galls. capacity. Water E and Manager. Dep. £3 3s.

JUNE 30.

Dudley CBC.—3,000 sq. yds. of r.c. roadway, 1,700 sq. yds. asphalt footway, 500 lin. yds. drainage and 500 yds. kerbing for ext. of bus centre. BE. Dep. £5 5s.

JULY 6.

Camelford RDC.—Saint Breward sewerage and sewage disposal, contract No. 109. E&S. Dep. £5 5s.

GENERAL BUILDING WORK

(LONDON)

Bethnal Green.—REDEVELOPMENT.—The acquisition, clearance and partial development for housing purposes of about 2½ acres of land in Parmiter-st. has been proposed by LCC Hsg. Com. The estimated cost would be £46,000, and about 59 dwellings can be erected on the land.

Bethnal Green.—REDEVELOPMENT.—The acquisition, clearance and partial redevelopment for housing purposes of about 7 acres of land at the Newling-st. areas, at an estimated cost of about £410,000, has been proposed by LCC Hsg. Com. About 279 dwellings can be erected on the site.

Brixton.—FLATS.—Proposals have been made by LCC for the erection of two four-storey blocks of maisonettes and a two-storey block of flats in Brixton Water-la. The 38 dwellings will cost £91,500, it is estimated.

Fulham.—ADAPTATIONS.—LCC Welfare Com. propose to acquire and adapt Fulham Babies' Hospital, 23, Broomhouse-rd., to provide accommodation for six families requiring special care, with the necessary staff. The cost of acquisition, adaptation and alterations would be £11,810.

Hackney.—DEVELOPMENT.—Revised proposals have been made by Hsg. Com. for the development of the two sites in Homerton High-st. by the construction of 100 dwellings with shops, garages and ancillary buildings, at an estimated cost of £305,350, including cost of site acquisition. They now provide for a nine-storey block of dwellings on the site between Ponsford-st. and Isabella-rd., as well as a three-storey block of 21 flats on the north side in front of the original Banister House estate. Wates, Ltd., 1258, London-rd., SW16, have been invited to negotiate a tender for the construction of the reinforced concrete frame for the main block. The architects for the scheme are Messrs. Joseph, 10, Lowndes-sq., SW1.

Hackney.—DWELLINGS.—Hsg. Com. have recommended MBC's approval to the development of the Egerton-rd. housing site by the construction of six houses and 39 flats at a total estimated cost of £122,000. The scheme was prepared by Boro' E.

Holborn.—APPOINTMENT.—Hsg. Com. recommend the appointment of Oswald Parratt, FRICS, Adelaide House, London Bridge, EC4, as quantity surveyor for the revised scheme to provide additional flats at the sites of Nos. 62-64, Red Lion-st. and 38, Eagle-st.; also for the ten flats to be erected on the site of Nos. 15 and 16, Coram-st.

Holborn.—SITE ACQUISITION.—Hsg. Com. have been considering proposals to acquire the site of Nos. 59-75 (odd), Mount Pleasant and Nos. 8-13, Pooles-bldgs. for housing purposes.

Islington.—CHILDREN'S LIBRARY.—The appointment of E. C. P. Monson, AA.RIBA, 120, Moorgate-st., EC2, and O. E. Parratt, FRICS, Adelaide House, London Bridge, EC4, as architects and quantity surveyors respectively for the construction of a proposed children's library on the site of Block M of the Rotherfield-ct. housing scheme has been recommended by Public Libraries Com.

Islington.—SITE ACQUISITION.—MBC propose to acquire sites in Fieldway-cres., Melgund-rd., Kelvin-rd., Newington Green-rd., Middleton-gr. and Rotherfield-ct., Block M, upon which it is hoped to erect about 200 dwellings.

Poplar.—HOUSES, MAISONETTES AND FLATS.—Proposals have been made by LCC Hsg. Com. for the development of about 10 acres of land at Tetley-st. by the erection of flats, maisonettes and houses, providing a total of 354 dwellings. The estimated cost of the development is £820,250, and the scheme was prepared by LCC architects' department.

St. Marylebone.—APPOINTMENTS.—Hsg. Com. recommend the appointment of the following architects: Louis de Soissons, Peacock, Hodges & Robertson, of 3, Park-sq. Mews, NW1, for the Pembroke-terr. housing scheme; and Bridgewater & Shepheard, 42, Bruton-pl., W1, for the Church-st. extension scheme.

St. Marylebone.—OFFICES.—Proposals have been made by Marks and Spencer, Ltd., Michael House, 82, Baker-st., for the erection of a large block of offices on a site at the junction of Paddington-st. and Chiltern-st., at an estimated cost in the region of £500,000. The necessary planning permission has been received. In addition, they propose to erect a three-storey office block on a contiguous site behind St. Andrew's-mans. and abutting on to The Gardens.

Shoreditch.—SITE ACQUISITION.—LCC Hsg. Com. propose the acquisition of about two-fifths of an acre of cleared land in Orsman-rd. as an extension of the council's adjoining Whitmore estate. About 25 dwellings could be erected on the site.

Wandsworth.—SCHOOL.—A site for a new county primary school to provide 280 places has been allocated in the layout of the Roehampton No. 3 housing area which is expected to be fully developed by 1958-59, when the new school will be required.

Wandsworth.—SCHOOLS.—LCC Ed. Com. have approved schemes for the erection of the following new county primary schools: one for the Bonneville area on the west side of King's-ave. at an estimated cost of £120,470; one for the Cowper's-row area on the western side of Upper Tulse-hill at an estimated cost of £42,760; and one for the Roehampton housing area (No. 2) between Mount Clare and Maryfield convent, at an estimated cost of £107,210. The schemes were prepared by LCC architects' department.

(PROVINCIAL)

Bakewell.—RDC to erect 6 houses at Tideswell, 6 at Bradwell, 6 at Calver and 4 at Eyam.—Derbyshire CC propose extensions to Lady Manners Sch. in 1956/7 programme, £60,000 est.

Barnsley.—TC propose erection of home for aged on Athersley North Estate.

Barrow-in-Furness.—Manchester Reg. Hosp. Board propose adaptations at Monks Croft to form new nurses' training school.

Billingham-on-Tees.—UDC to negotiate contract with Wimpey & Co., Ltd., Orchard House, Jesmond, Newcastle-on-Tyne, for erection of 300 " No Fines " houses instead of 400 as originally suggested, during next two years. Council's S. J. H. Shepherd.

Billingham-on-Tees.—R. Cowan, 20 Finkle-st., Stockton-on-Tees, architect for proposed reconstruction of Billingham Synthonia Recreation Club, Belasis-la.

Birkenhead.—BC propose erection of 27 police flats at " Greenbank," Egerton Park, £40,300 est.; approved layout for 10 houses at Well-la.; propose erection of four-storey flats in Oxton-rd. area and two- and three-storey flats in Brattan-rd. area; to prepare detailed plans for four-storey flats on site of St. Andrew's Church; to prepare sketch plans for erection of baths at Woodchurch Esate; seek Min. approval for fire and ambulance station at Woodchurch Estate.

Birmingham.—EC appointed Quick & Lee, Birmingham, as A for extensions at Wheelers-la. Boys' Mod. Sch. QS, Reuben Holbrow & Ptnrs., 68 Harbourne Park-rd., Birmingham. Consulting E, Hoare, Lea & Ptnrs.—Approved extensions to St. Brigid's RC Sch., Northfield, £45,000 est.

Blackburn.—TC seek loan £49,766 for erection of hostel at Chadsworth Estate.

Blackpool.—Taylor Woodrow, Ltd., propose erection of 30 houses off Clifton-rd.

Blyth (Northumberland).—G. W. Wells, Links-rd., to appeal to Ministry against refusal of Northumberland Cty. Plan. Com. to approve £30,000 scheme for ballroom and garage on Blyth Links.

Blyth.—TC propose 14 houses in Coomassie-rd. Plans by D. W. Foster, BE.

Bolton.—BC approved preliminary plans for proposed Smithills County Grammar Sch.—EC to invite tenders for 2 additional classroom units for Whitecroft-rd. Cty. Sec. Sch. To invite tenders from selected contractors for extensions at Tonge Fold Cty. Prim. and Sec. Schs., £10,000 est.

Carlisle.—Barwick Brothers, builders, Gilsland, to erect five bungalows in Kingstown-rd.

Carlisle.—TC to invite tenders for 22 bungalows and 16 flats at Shady Grove-rd.—County Garage Co., Ltd., Lowther-st., Carlisle, propose erection of new tractor depot between East Nelson-st. and Graham-st. Architects, Johnston & Wright, 13 Castle-st., Carlisle.

Cheadle Hulme.—PC Council of St. Andrew's Church propose erection of new church, £24,000 est. Work to commence approximately spring, 1956.

Darlington.—TC seek loan sanction £87,304 for first instalment of new College of FE.

Darlington.—Raine Brothers, builders, Bowman-st., Harrowgate Hill, to erect six houses in Woodcrest-rd.

Darlington.—Chemical and Insulation Co., 1 West Auckland-rd., to build block of offices.

Dudley.—BC to seek Min. approval for erection of Central Clinic, £56,000 est.

Eccles.—BC appointed Frank Bradley, Penny Bank Chambers, Wood-st., Bolton, as A for erection of flats on site at junction Barton-la./Trafford-rd./Fairless-rd.

Felling (Co. Durham).—Revised plans approved for motor car showroom, filling station, workshops and offices in Sunderland-rd. for Grimshaw Leather & Co. Architects, Mauchlen & Weightman, Saville-row, Newcastle-on-Tyne.

Filey.—East Riding CC propose erection of Sec. Sch., £160,000 est.

Gateshead.—Newcastle Hosp. Board. " Dunira," Osborne-rd., Newcastle-on-Tyne, to erect mortuary block at Bensham Gen. Hosp., and plans approved. Chief A, P. H. Knighton.

Gosforth.—UDC to build 12 houses in blocks. Plans by Surveyor, C. Wyld.

Hebburn-on-Tyne.—UDC to build eight aged people's bungalows, 12 flats, 70 houses on Monkton-la. estate. Plans by Surveyor, T. Meadows.

Horwich.—Independent Television Authority received from Lancs Planning Com. permission to build transmitting station on Winter Hill.—ITA also received planning permission to build Midlands station at Hints, near Lichfield.

Houghton-le-Spring.—UDC S prepared plans for 100 houses at Shiney-row, and estimates amounting to £132,295 submitted to MH and LG for approval.

Keighley.—TC approved plans: 40 dwellings on Braithwaite Estate; 8 Cornish Unit flats at Braithwaite Estate and 52 at West-la. Estate.

Kent.—CC Ed. Com.'s draft building programme for 1956-57 includes works at the following primary and secondary schools: Penge. Sec. Girls (£103,150); Chislehurst and Sidcup, Cray Valley Tech. Boys (£34,800); Chislehurst and Sidcup, North Cray Cty. Prim (£39,325); Orpington Sec. Boys (£103,150); Orpington Sec. Girls (£103,150); Crayford, Normandy Cty. Prim. Jun. (£50,360); Erith, The Oaks Sec. Boys (£95,230); Horton Kirby CE Prim. (£21,235); Gravesend Tech. Boys—additional accommodation (£25,000); Longfield Sec. (£142,000); Northfleet, Shears Green Cty. Prim. (£77,088); Stone, St. James's-la. CE Prim. (£30,514); Edenbridge Sec. (£15,000); Kemsing Cty. Prim. (£21,681); Tonbridge Grammar Girls (£50,000); Royal Tunbridge Wells Grammar Girls (£68,000); Aylesford Cty. Prim. (£44,044); East Malling Prim. (£30,514); Linton Corner Sec (£142,000); Chatham, Walderslade Sec. Girls (£142,000); Chatham, Wayfield Cty. Prim. (£50,336); Rochester, Warren Wood Cty. Prim. (£40,150); Sheerness, West Minster Cty. Prim. (£39,325); Sheppey Tech. Girls (£75,000); Sittingbourne Grammar Girls (£112,200); Sittingbourne and Milton, South-ave. Cty. Prim. (£39,325); Whitstable, the Sir William Nottidge Sec. (£20,000); Ashford Grammar Girls (£32,000); Tenterden CE Jun. (£34,600; New Romney, Southlands Sec. (£58,000); Folkestone, Harcourt Sec. Girls (£45,000); Hythe, Brockhill Sec. Girls (£95,230); Dover, Aycliffe Cty. Prim (£29,887); Dover Grammar Girls (£20,000); Eastry Cty. Prim. (£21,681); Sandwich Sec. (£39,500); Sandwich, Sir Roger Manwood's Grammar, extension (£25,000); Margate, Westgate Cty. Prim. (£40,150); Thanet Tech Girls (£61,000); Beckenham, Highfield Cty. Prim. (£40,150); Beckenham Grammar Girls (£57,050); Bexley Grammar (£49,900); Bromley Tech. Boys (£73,900); Gillingham, Fairview-ave. Cty. Prim. Jun. (£50,336); Gillingham, Fairview-ave. Cty. Prim. Inf. (£39,325); and one RC Prim. Sch. (£30,000).

Kettering.—Northants CC to invite tenders for second stage of reconstruction of fire brigade headquarters at Headlands.

Kettering.—Northants CC to acquire site at Grange estate for erection of cty. prim. sch.

Kidderminster.—TC approved plans for factory at Walter Nash-rd. West for Boulton & Paul, Ltd.

Lancaster.—TC propose erection of auction mart and slaughterhouses at Scotforth.

Leeds.—TC approved preliminary layouts for 360 dwellings at Butcher Hill; 550 at Arnley Heights; and 750 dwellings and shops at Brackenwood Estate.

Liverpool.—TC propose erection of multi-storey car park at Tithebarn-st., £325,000 est.

Longbenton (Northumberland).—George Angus & Co., Ltd., Westgate-rd., Newcastle-on-Tyne, plan construction of factory at Benton-sq. No detailed plans yet approved.

Lytham St. Annes.—BC approved plans: self-service store and meeting hall on easterly side of Kilnhouse-la. for Blackpool Co-op. Society, Ltd.; 9 detached bungalows at Gretdale-ave. for Arnold Ingham & Sons, Ltd.

Manchester.—TC approved plans for conversion of synagogue to clothing factory at 229/233 Waterloo-rd., Hightown, for Woollens (Manchester), Ltd. Architect, A. M. Isaacs, 10 Corporation-st., Manchester.—Manchester Literary and Philosophical Soc. propose rebuilding of war-damaged club premises at 36 George-st. Architects, Francis Jones & Son, 178 Oxford-rd., Manchester.—T. Shackleton & Son propose single-storey extension to printing works at 40 Dalton-st., Collyhurst, Manchester. A Stanley Birkett, 103 Portland-st., Manchester 1.—Leach, Rhodes & Walker, 90 Deansgate, Manchester, architects for erection of parsonage at corner Goodman-st./Lewis-ave., Blackley.—Queens Buildings (Manchester), Ltd., propose reconstruction of fourth floor to war-damaged office block at Queens Chambers, 5 John Dalton-st., Manchester 2. Architects, Thorpe & Smith, 65 Barton Arcade, Deansgate, Manchester.—Reg. Hosp. Board seek approval for provision of office accommodation at Royal Lancaster Infirmary; radio-biology research laboratory, refectory and chapel at Christie Hospital and Holt Radium Institute, Withington, Manchester; propose erection of new general hosp. at Wythenshawe, £1,250,000 est.; extensions at Grange Hall Mental Deficiency Hosp., Holmes Chapel, £609,000 est.; new maternity unit at Hope Hosp., Salford, £250,000 est.; and development of services at Royal Lancaster Hosp., Lancaster, £260,000 est.

Manchester.—Work expected to start within 12 months on £2m. scheme to make Manchester University fully residental. Plans ready for first new hall on part of 100-acre site owned by university at Fallowfield. It will house 180 students and take more than two years to build. Plans almost complete for another hall to house 100 students by conversion and extension of two houses at West Didsbury. This would take about a year. Two other halls will be built on Fallowfield site. Estimated cost of hall of residence for 150 students is £300,000. Vice-Chancellor, Sir John Stopford.

Meriden.—RDC propose erection of 134 houses between Birmingham-rd., Fillongley-la. and Leys-la., Corley.

Middlesbrough.—TC approved sketch plans for proposed maternity and child welfare centre at Park End. Plans prepared by F. E. Cross & Ptnrs., 20 Booth-st., Manchester, for erection of warehouse, offices and showroom for R. Johnson, Clapham & Morrison, Ltd., Zetland-pl.—Garbutt, Archibald & Archibald, 23 Albert-rd., architects for proposed warehouse, offices and showrooms in Cannon-st. for Middleton & Co., Ltd., manufacturing chemists, Boundary-rd. Contracts may be let within few weeks.—Marks & Spencer, Ltd., to rebuild and extend stores in Linthorpe-rd. Firm's architects, Norman Jones & Rigby, Lord-st., Southport.—Nesham Garages, Ltd., 117 Grange-rd., to spend £10,000 on construction of new premises in Lower Gosford-st.—Hills Clothiers, Ltd., Newport-rd., seek 2,000 sq. yds. land in Lower Feversham-st. for construction of new premises.

Middlesbrough.—TC to build 64 houses at Pallister Park. Plans by BE, J. A. Kenyon.

Newcastle-on-Tyne.—Hsg. Com. considering building of blocks of five-storey flats on land at Shieldfield released for housing.

Newcastle-on-Tyne. — Northern Gas Board, Grainger-st., considering construction of low-temperature coking plant. Proposed site not yet announced.

Newcastle-on-Tyne.—M. Gatoff, 25 Trafalgar-st., architect for proposed factory alterations in Blandford-st. for M. Ernstone & Sons.—Plans prepared by R. Wood, 14 The Grove, Gosforth, for proposed motor showrooms in Newington-rd. and Dinsdale-rd. for Novomobiles (1932), Ltd., Newcastle.—Revised plans by E. M. Lawson, Barras Buildings, Barras Bridge, for proposed motor showrooms and offices at St. Mary's-pl. for William Wightman been approved.

Newcastle-under-Lyme.—Methodist Auth. (Rev. J. A. Hoyles) propose erection of hall on Bradwell Estate, £10,000 est.

Northants.—CC propose adaptation of following premises as homes for aged people: 17 The Headlands, Kettering, £14,945 est.; Elm Bank, Northampton-rd., Kettering, £10,960 est.; Elsden Lodge, Midland-rd., Wellingborough, £15,575 est.; propose erection of home at Hazel Leys Estate, Corby.

North Shields.—G. H. Gray & Ptnrs., Camden-st., architects for 20 bungalows and garages at West Chirton; and terraced flats at North Shields.

Oldham.—BC approved in principle preparation of scheme for erection of Town Hall; approved plans, 9 bungalows at Albert-st., Bardsley, for A. Pellowe & Sons.

Oswestry.—TC to acquire land for extensions to Smithfield.

Padiham.—Glover & Main, Ltd., London, propose erection of large factory.

Peterlee.—Plans to be prepared for Methodist Church, est. cost £46,000. Scheme will include one large and two small church halls. Rev. W. Hough, superintendent minister.

Reading.—Final plans approved for RC secondary modern school to be built on 11-acre site on former Denton's Field, Bath-rd. housing estate, cost £103,152. Architects, W. H. Saunders & Son, of Southampton.

Redcar.—TC to build 10 bungalows for old people. Plans by BS.

Redditch.—UDC to negotiate with Joseph Webb & Co., Ltd., Ivy House-la., Sedgley, and C. Bryant & Son, Ltd., 65 Whitmore-rd., Birmingham 10, for erection of 100 houses at Studley-rd. Estate.

Richmond (Yorks).—RDC received Min. approval to building of 52 houses at Scorton, cost £66,185. Plans by S.

St. Helens.—New fire station proposed, est. cost about £150,000. Work will start shortly on new building, on land close to major fire risk buildings in St. Helens. Sub-station planned to serve north end of town. This scheme also approved by Home Office.

South Bank-on-Tees.—No contracts yet placed for erection of PH in Skippers-la. for Vaux & Assoc. Breweries, Ltd. Architects, Kitching & Co., 21 Albert-rd., Middlesbrough.

Stockport.—Manchester Reg. Hosp. Board propose erection of physiotherapy department at Stepping Hill Hosp.

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Stockton-on-Tees.—Ed. Com. to build junior and infant sch. for 280 scholars at Roseworth. Plans by Boro' A. T. Hartley.

Sunderland.—F. M. Owsnett, 8 Bedford-st., been appointed consulting E for new Springwell-rd. Health Centre, for TC.

Sunderland.—Additions proposed to Rink Ballroom at Holmeside. Work includes new entrance, additional lavatories and cloakrooms and committee rooms. Architect, E. M. Lawson, Barras Buildings, Barras Bridge, Newcastle-on-Tyne.

Tynemouth.—Revised layout plans approved for residential developments on Kennersdene Park estate for Tersons, Ltd., London.—It is proposed to erect St. Cuthbert's RC Sec. Mod. Sch. in two stages. Revised preliminary plans to be prepared. BE, D. M. O'Herlihy, 16, Northumberland-sq., North Shields.

Wallsend.—TC asked J. W. Hanson & Son, 123 Northumberland-st., Newcastle-on-Tyne, to prepare scheme for new branch library in Churchill-st.

Wallsend.—TC to apply for permission to borrow £67,992 for 54 flats, roads and sewers at Low Willington; £14,904 for 11 houses and sewers at Whitbygdns.; and £2,947 for heating in Town Hall. Boro S, G. Teasdale.

Wallsend.—TC approved application by Wallsend Slipway & Engineering Co., Ltd., to build new welding shop.

West Bromwich.—TC approved plans: Offices and stores at Phoenix-st. for Robinson Bros., Ltd.; erection of milk distribution centre at Holloway Bank and Bilport-la. for Midland Counties Dairy, Ltd.

Whitby.—UDC to let contract for erection of sports pavilion on White Leys Estate. Plans by S.

Whitby.—UDC to discuss with Peacock and Bewlay, architects, 224, Hagley-rd., Birmingham, proposed redevelopment of cleared sites in vicinity of Boulby Bank.

Whitley Bay.—TC approved schemes for town hall and offices, swimming pool and car and coach park. Total est. cost £250,000. BS, E. Roberts.

Widnes.—TC approved plans for conversion of existing non-conformist chapel as crematorium. £16,600 est.

Worcs.—CC approved in principle erection of five-storey office block at St. Oswalds-rd., Worcester. £80,000 est.

Workington.—BC to obtain tenders from John Twiname, Ltd., T. Armstrong, Ltd., and John Laing & Son, Ltd., for erection of 100 new tradition houses.—BS to prepare plans and estimates for erection of community centre at Salterbeck; approved plans: extension to offices at Vulcans-la. for Messrs. Pratt & Mitchinson. Architect, N. M. Phillips, 43 Oxford-st., Workington.

TENDERS

* Denotes *accepted*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government Departments.*

Ayr.—58 houses at site between Thonnaflat Maternity Home and Whittletts. Architect, Thomas O'Brien, ARIBA, Master of Works Offices, High-st., The Sandgate, Ayr. *Blackburns (Dumbarton), Ltd., Levenbank, Jamestown, Alexandria, Vale of Leven.

Bebbington.—28 houses at Teehey-la. Estate for TC: *Lloyd & Cross, Ltd., Argyle-st., Birkenhead, £35,046.

Bedlington.—Child welfare centre. *James Dodds, Morpeth, £10,000.

Bedlington.—School at Bedlington, Northumberland, for 520 children. *T. Curry & Son, Melden-st., Newcastle-on-Tyne.

Bellingham.—Fire station at Bellingham. *T. D. Bird & Son, Hencotes, Hexham.

Birkenhead.—Erection of 70 houses and 30 flats at the Woodchurch Estate for BC: *Wm. Thornton & Sons, Ltd., 38 Wellington-rd., Liverpool, £127,931.

Birmingham.—Nursery sch. at Irwin-ave., Rednal, for EC: *C. Green & Sons, Ltd., 133 Monument-rd., Birmingham, £15,178. RC grammar sch. at Acocksgreen: *Turriff Construction Co., Ltd., Budbrooke-rd., Warwick.

Blackpool.—42 Gregory Flats at Mereside for TC: *Gregory Housing, Ltd., 27 Chapel-rd., Worthing, £54,541.

Bolton.—26 bungalows at the Breightmet Neighbourhood Unit for TC: *Drapers, Ltd., Tonge-yard, Bury-la., Bolton.

Bridgnorth.—Concrete shell building for proposed factory for Star Aluminium Co., Ltd., Wolverhampton: *Trussed Concrete Steel Co., Ltd., London.

Chadderton.—80 bungalows at Broadway Estate for UDC: *Roy & Partners, Ltd., 25 Cross-st., Manchester, £101,114.

Chichester.—45 houses and 20 flats, Parklands estate, for City C. Engineer and Surveyor, R. A. J. Cork, AMICE, MIMunE, Greyfriars, North-st., Chichester. Quantities by Hary Trinick and Ptnrs., 63, South-st., Chichester: *J. W. Stratton, Ltd., 39, Buckingham-rd., Shoreham-by-Sea, Sussex, Contract 18, £31,945; Contract 19, £54,318.

Dudley.—8 aged persons' cottages at Wrens Nest-rd. for BC: *Five Oaks Estates, Ltd., £9,627.

Faringdon (Berks).—Ten houses at Faringdon and Shrivenham, for RDC.

J. Hedgecock, Coxwell-st., Faringdon (3 houses, Faringdon only—Contract 1) ..	£4,938
F. Knapp & Son, Shrivenham, Berks (3 houses, Shrivenham only—Contract 3) ..	5,354
Wain Bros., Swindon-rd., Stratton St. Margaret, Wilts	17,681
H. J. Knapp & Sons, Ltd., Stanford in the Vale, Berks	16,605
†S. G. Bowler & Son, Ltd., Bromsgrove, Faringdon	14,207

Gateshead.—Additional floor to the stores of Shephard & Sons, general outfitters, etc, Gateshead. *R. W. Bell & Sons, Mistletoe-st., Newcastle-on-Tyne. Architect: R. Burke, 10, Lambton-rd., Newcastle-on-Tyne.

Glasgow.—Alterations and additions for Boots Chemists, Ltd. Architect: Mr. C. Oates, FRIBA, Station-rd., Nottingham: *Thaw & Campbell, Ltd., 136, Paton-st., Dennistoun, Glasgow.

Gosforth.—28 two-storey flats on the South Gosforth Farm Estate for the UDC. Surveyor, C. Wyld: *Unity Structures, Ltd., £28,526.

Lambeth.—Improvement Works, Vauxhall-mans., for MBC (revised tender): *H. F. S. Ward, Ltd., £52,221.

Leeds.—60 "Cornish Unit" dwellings at Seacroft for TC: *Selleck Nicholls & Co., Ltd., St. Austell, Cornwall, £81,832.

LCC.—Adaptation and extension of Cordwainers technical college (Bethnal Green). Tenders for the work on either or both of two bases were invited from ten firms. Under basis A the contract would allow for fluctuations in wages and costs of materials, and under B for fluctuations in wages only. Nine tenders were received as follows:—

	Basis	
Ashby & Horner, Ltd., City of London	A	£91,548
Marshall Andrew & Co., Ltd., Westminster	B	91,668
Marshall Andrew & Co., Ltd., Westminster	A	86,982
Tersons, Ltd., Finchley	B	86,666
Tersons, Ltd., Finchley	A	85,166
J. Jarvis & Sons, Ltd., Lambeth ..	B	86,549
J. Jarvis & Sons, Ltd., Lambeth ..	A	83,221
Rush & Tompkins, Ltd., Sidcup ..	A	81,826
Thomas & Edge, Ltd., Woolwich ..	A	81,810
H. Fairweather & Co., Ltd., Muswell Hill	A	79,847
W. I. Marston & Son, Ltd., Fulham	A & B	79,842
*S. A. Gregory (Builders and Contractors), Ltd., Westminster ..	A	77,978

The comparable estimate of Mr. Vivian Levett, ARIBA, the architect responsible for the scheme, is £79,476 on basis A.

LCC.—Nine firms on the prescribed list were invited to tender on alternative bases (with (basis A) and without (basis B) provision for fluctuation in the cost of materials) for the construction on the Springfield Hospital site of a detached house, three cottages in a terrace, and farm buildings. Eight of the firms submitted tenders as follows:

	Basis A	Basis B
Marshall Andrew & Co., Ltd., Westminster	£29,555	—
Siggs & Chapman, Ltd., Croydon	28,616	—
John Mather (Builders), Ltd., Finsbury	—	28,390
Flowitt & Co., Ltd., Wimbledon ..	28,159	—
Wm. J. Jerram, Ltd., East Ham	26,840	—
G. Ward (Ealing), Ltd., Ealing ..	26,305	26,607
W. Walkerdine, Ltd., Kensington	25,977	—
*Kerridge (Cambridge), Ltd., Cambridge	25,771	—

The architect's comparable estimates are £26,747 (basis A) and £26,981 (basis B).

LCC.—Development of the Daley-st. site (now Wyke estate), Hackney. Twelve firms on the prescribed list were invited to tender, on alternative bases, for the construction on the estate of 89 flats in one eight-storey block, two five-storey blocks and one three-storey block, and 11 houses in a two-storey block, together with 46 tenants' stores, a fitted playground, a toddlers' play space and seven tenants' gardens. The rates and prices in the bills of quantities for this work (contract A) will be used to value the cost of construction of 60 flats in the remaining two five-storey blocks and 27 tenants' stores (contract B). Tender prices on basis A are subject to fluctuations in both rates of wages and cost of materials, and tender prices on basis B are subject to fluctuations in respect of rates of wages only. Eleven tenders were received, the amounts for contract A being as follows:

	Basis A	Basis B
Percy Bilton, Ltd., Westminster	£213,680	—
C. Bryant & Son, Ltd., Westminster	212,202	£214,625
E. H. Smith (Croydon), Ltd. Croydon	210,519	—
J. Jarvis & Sons, Ltd., Westminster	210,214	213,322
Unit Construction Co., Ltd. Feltham	209,357	218,873
Gee Walker & Slater, Ltd., Westminster	208,831	—
W. J. Simms, Sons & Cooke, Ltd., Westminster	206,085	207,630
M. J. Gleeson (Contractors), Ltd., North Cheam	205,680	210,090
Rowley Bros., Ltd., Tottenham	203,628	—
J. M. Hill & Sons, Ltd., Wembley	203,336	218,336
*Rush & Tompkins, Ltd., Sidcup	199,385	203,385

The architect's comparable estimates are £200,046 (basis A) and £202,030 (basis B), and LCC propose to accept the lowest tender on basis B.

¶London (Admiralty).—Particulars of contracts over £1,000 in value:—

Kent: Asphalting to roofs and floors, Permanite, Ltd., 455, Old Ford-rd., E3. *Pembrokeshire:* Building work, Geo. Wimpey & Co., Ltd., Hammersmith-grove, W6. *Northern Ireland:* Heating and hot water installation, Musgrave & Co., Ltd., St. Anne's Works, Belfast.

¶London (Air Ministry).—Contracts to the value of £500 or over for the week ended May 21:—

Building work: Hadsphaltic Construction Co., Ltd., Co-operative-la., Albion-sq., Pembroke Dock; Ellis Thompson & Co., Ltd., 1, James-st., Louth, Lincs; James Miller & Partners, Ltd., 18, George-st., Edinburgh, 2; Bush Builders (Norwich), Ltd., Mile Cross-la., Norwich; The Scottish Tarmacadam & Asphalte Co., Ltd., 44-52, Bilbao-st., Glasgow, C5; F. Parkinson, Ltd., Mowbray-drive, Blackpool, Lancs; Cecil M. Yuill, Ltd., Villiers-st., West Hartlepool, Durham; William Sindall, Ltd., Gloucester-st., Cambridge; Dudley Coles, Ltd., Bath-st., Plymouth. *Construction of runways, etc.*, G. Percy Trentham, Ltd., Pangbourne, Reading, Berks. *Resurfacing parade ground:* The General Asphalte Co., Ltd., 56, Milk-st., Birmingham, 5. *Resurfacing runway:* George Wimpey & Co., Ltd., Hammersmith-grove, London, W6. *Artificers' work:* F. R. Hipperson & Son, Ltd., Invicta House, Wanz-rd., Dagenham, Essex; Drabble Construction, Ltd., 44, Aylesbury-st., Bletchley, Bucks; Pearson & Fraser, 34, Market-st., Lerwick, Shetland; Fred Pearson & Co., Ltd., 32, Cemetery-rd., Doncaster.

London (Metropolitan Police).—Result of tenders for Metropolitan Police building works:—

External painting, Gilmour section house, Renfrew-rd.: *J. Hoare & Son, £879. Painting and repairs, etc., Chadwell Heath police station: *Robinson Bros., Ltd., £558. External painting and minor repairs, Edward Henry-bldgs.: *A. Black & Son, £1,098. External redecorations, Chelsea police station and married quarters: J. Poore & Sons, Ltd., £503. Internal redecorations, Walton-st.: J. Poore & Sons, Ltd., £1,331. External redecorations, Phillip Game section house: J. Poore & Sons, Ltd., £581. Painting and repairs, telephone boxes "T" division: *Middlesex Paint Craftsmen, £1,866.

¶London (MOW).—Contracts placed by Ministry of Works for week ending May 14:—

Buckinghamshire: Block D, Bletchley Park, re-covering bituminous felt roofs, Bitumen Industries (Contractors), Ltd., Whitby-rd. Trading Estate, Slough. *Caernarvonshire:* North and South Penrallt, erection of telephone exchange, Watkins Jones & Son, Ltd., 10, Mount-st., Bangor. *Cheshire:* POSO, Chadwick-st., Moreton, lateral extension and new garage block, John Perkins & Son, Ltd., White House, Whitby-rd., Ellesmere Port. *Essex:* BPO, Grays, major alterations, S. Cronin & Sons, Ltd., Britannia-rd., Warley, Brentwood. *Herefordshire:* HPO, Hereford, reallocation of accommodation, Bayley Brothers (Hereford), Ltd., Cotterell-st., Hereford. *Lancashire:* Moss Side Hospital, Maghull, Liverpool, rebuilding of boundary wall to male compound, E. B. Jones & Rawlinson, Ltd., Leaf-sq., Salford, 6. *London:* Berger House, 36-38, Berkeley-s., W.1, internal decorations, The South London Decorators, Ltd., 9, Streatham High-rd., SW16; Bethnal Green Museum, external and internal decorations, Dicol Decorators, 5, Petty France, SW1; Government Offices, Great George-st., SW1, external decorations, F. Troy & Co., Ltd., 131, Great Suffolk-st., SE1; Montague Mansions, Crawford-st., W1, internal decorations in blocks 1, 3 and 5, F. Troy & Co., Ltd., 131, Great Suffolk-st., SE1; Bankers' Clearing House, Lombard-st., EC6, provision of temporary BPO, Trollope & Colls, Ltd., 41-44, Great Queen-st., WC2. *Middlesex:* NPL, Teddington (DSIR), external decorations, T. H. Kenyon & Sons, Ltd., Chancellor's Works, Croxley-rd., W.9. *Stirlingshire:* MOS, Inchterf, new warrant officers' quarters, J. T. Grey (1954), Ltd., 127, Fenwick-rd., Giffnock.

¶London (War Dept.).—Works contracts placed by War Department for week ended May 14:—

Ballymena: Miscellaneous, Samuel Coulter & Sons, Ballymena. *Dorset:* Flooring, Bristol Art Floors, Ltd., Bristol. *Durham:* Roadwork, Tarslag, Ltd., Wolverhampton. *Herts:* Hutting, Davey Estates, Ltd., Elstree. *Kent:* Roadwork, Johnson Bros. (Aylesford), Ltd., Tonbridge. *London:* Roadwork, The

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Unity Asphalt Co. (London), Ltd., London. *Wiltshire:* Air conditioning, Hawkins Bros. (Contractors), Ltd., Bournemouth.

Longbenton.—New unit for 560 scholars at Longbenton CP Sch., Northumberland: *J. R. Rutherford & Son, Jesmond-rd., Newcastle-on-Tyne.

Manchester.—Retail store and stockrooms at 595/597 Wilbraham-rd., Chorlton-cum-Hardy, for F. W. Woolworth & Co., Ltd.: *Direct labour. Following for Reg. Hosp. Board:—Conversion of Corbar Hall, Buxton, as a maternity unit: *John Royle, Market-st., Buxton.

Middlesbrough.—The TC has allocated contracts for the erection of 44 houses with the following local builders: *D. E. Dixon (10 houses) *G. Wilmhurst (10); *E. Lowe (12); and *J. C. Mitchell (12).

Newcastle.—County library at Forest Hall, Newcastle: *Crawford & Huddard, contractors, Wideopen, Newcastle-on-Tyne.

Newcastle-on-Tyne.—19 houses in Redesmouth-pl. Architects, Dryden & Shaw, 6 Market-st., Newcastle: *R. Bowey & Son, Great North-rd., Newcastle.

Newcastle-on-Tyne.—School at Kenton, Newcastle-on-Tyne, for 560 scholars. Architect, R. Burke, 10 Lambton-rd., Newcastle-on-Tyne: *A. Anderson (Builders), Ltd., Stanmore-rd., Newcastle-on-Tyne.

Newcastle-on-Tyne.—Assembly bay, new offices and laboratory additions for Sir Howard Grubb Parsons & Co., Ltd., Walkergate, Newcastle: *Direct labour by Construction Engineer's Dept. of C. A. Parsons & Co., Ltd., Newcastle (parent company).

Newcastle-on-Tyne.—Infants sch. for 320 children at Stead-la.: *John Jackson & Son, contractors, Corporation-st., Newcastle-on-Tyne.

Prudhoe-on-Tyne.—County mod. sch. at Prudhoe-on-Tyne for 520 scholars:*Middlemas Bros., Ltd., Stepney Bank, Newcastle-on-Tyne. Plans by the County Architect, County Hall, Newcastle-on-Tyne.

Rotherham.—100 houses at Kimberworth Park Estate for TC: *O. Weaver & Sons, Ltd., Harlington-rd., Mexborough.

Runcorn.—33 houses at Ship-st., Frodsham, and 12 off Station-rd., Sutton, for RDC: *W. E. Jones (Contractors), Ltd., Middlewich, £55,984.

Spennymoor (Co. Durham).—Rebuilding of St. Paul's Church. Architect, S. E. Dykes Bower, Quendon Court, Quendon, Essex: *F. W. Goodyear & Son, 60 Claypath, Durham, £26,000.

St. Marylebone.—Erection of the final block of 42 flats on the Townshend Estate, for BC: †Perry's (Ealing), Ltd., 75, Uxbridge-rd., W5, £86,442.

Stockport.—Brinnington Estate CP Sch. No. 2 for EC: *Moston Brick & Building Co., Ltd., Kenyon-la., Collyhurst, Manchester, £46,233.

West Hartlepool.—20 flats on the Owton Manor Estate for the TC. Boro' A, A. G. Sinclair: *F. M. Gibbon, Waldon-st., West Hartlepool (12 flats): *Wilson & Gammon, Tower-st., West Hartlepool (8 flats).

West Hartlepool.—New test house, offices and laboratories west of Brenda-rd. for the South Durham Steel and Iron Co., Ltd.: *A. Monk & Co., Ltd., Warrington, Lancashire.

Wolverhampton.—Radio store and laboratory at Park-la. for Ever Ready Co., Ltd., London: *A. F. Godfrey & Co., Ltd., Waterloo-rd., Wolverhampton.

Workington.—120 houses and 12 garages at Moorclose Valley Second Development for BC: *John Twiname, Ltd., £159,776.

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